

Representing the Invisibles of Landscape:
Considering an alternative approach to how a designer looks at,
analyzes and reads a site

by

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* All illustrations by author

I am an international student, having come from China to Winnipeg seven years ago. The reason I chose to go to a university in Canada was so simple: when I was on the other side of the Pacific Ocean sitting in front of the computer and looking into Canada, I was attracted by the incredible natural environment. On the other hand, environmental issues such as water, pollution, climate change, urban issues, health, and energy concerns in many communities, made me worry about the future of my homeland. With my life, I hope to make a positive contribution to China's future. I think the reason for me to have an idea about making a contribution to a better future in China is because I am young. I still believe many things can be changed in the future and I still believe in the power of change. There is nothing like an inspiring title when I feel this love for my homeland.

In 2008, I arrived in this new and strange city, Winnipeg. I spent the first three years studying Environmental Science, and the next four years studying Landscape Architecture, trying to find a way for my future. For the last seven years, I have been busy, tired, and happy. I learned to understand sustainable development, environmental awareness and surrounding environmental issues and concerns. I felt happy to do experiments on wetlands and write a scientific report to explain their current condition or write an assessment relating to their conservation. After I entered the Department of Landscape Architecture, I was even more excited about the applied knowledge and skills that I fostered to create a better environment. These experiences make me feel that I cultivated a really rich education in Canada.

However, I feel that the rich educational experience still lacks one part before I leave school, the transformation from learned knowledge to a personal worldview. To a design student, the process is the transformation from learned knowledge to a personal design philosophy.

The idea of cultivating my personal design philosophy makes me think about an old Chinese saying:

“When one is well cultivated, one will be able to put one’s house in order and, with harmony in one’s house, one may go on to render one’s service to one’s country and make one’s contribution to the world. In other words, when one’s knowledge is extended, one’s intention will become sincere and one’s mind rectified, thus one’s personal life will be cultivated.”

*(Hong Kong Shue Yan University.
<http://www.hksyu.edu/mission.html>)*

I am excited about the idea of developing my personal design philosophy in the practicum. I have completed seven Design Studios. Currently, I am eager to communicate *myself* with landscape design rather than communicate the knowledge from books to a landscape design project. But, where is the starting point in finding out one’s personal design philosophy?

I decided to start this with how a designer looks at, analyzes and reads a site.

There must not be any perceived gap between myself and landscape design. Thus I turned back on my previous design projects. I reviewed those projects and tried to recall my design processes. After reviewing my critical thinking on the meaning of contemporary landscape architecture design, I am dissatisfied with the way I looked at sites, and how I represented the research and the design of those projects. Thus the idea of rethinking landscape design method emerged.

I have identified some of the problems in my previous design work: unclear trains of thought in site analysis; no deep thinking in information representation and a lack of strong visual communication in my landscape design projects. The most important problem is that I did not see me, as a designer, presenting a design as myself. The revelation of these problems makes me curious to know more about the meaning of landscape design, and more passionate about re-discovering landscape representation.

I do not believe that every landscape designer will be good at all landscape designs, and I do not believe that every landscape design should be represented in the same way. Real landscape design should allow a diversity among landscape architecture designers. Designers think differently, but try to approach a common better future.

Many people still do not have a clear understanding about the role of landscape architects. Improving the quality of landscape representation and the diversity in landscape designers can help the public understand landscape architecture. How landscape architects define their work and how it is shown and communicated to the public is significant. Landscape architects must define the meaning of landscape architecture. Is it just horticulture, ecological preservation, or green matter surrounding buildings? I think landscape matters when it integrates a part of human life with a part of nature. From my own point of view, landscape is a language between human life and nature. A Landscape Architect is the person to speak this language. Representation, has an important part in the presentation of ideas and design becomes a key in making visible and understandable, the speaking of this language.

LANDSCAPE
DESIGN

LANDSCAPE
DESIGNER
(MYSELF)

SITE

*“The language of landscape can be
spoken, written, read, and imagined.”
(Spirn 15)*

How?

Abstract

In order to help one recognize site through design, French landscape practitioner and teacher Christophe Girot (par. 5) presented the “Four Trace Concept in Landscape Architecture” which serve as tools for landscape investigation and design. This practicum, which investigates landscape representations, follows this process of **landing, grounding, finding and founding**.

I aim to approach an alternative approach to looking, analyzing and reading a site, and discover a way to approach the representation of landscape, specifically the Red River Floodway, through the investigation of different landscape design stages that I identified: from site visit, to site research, to site design.

In the practicum, I will not focus on describing the positive or negative aspects of my own representations, but I will write summaries of the discovery process in each design stage, and indicate the essences of representations for each design stage, while trying to define the meaning of this process.

By doing so, the discovery process itself may contribute to landscape communication such as an understanding of places, people, and design process and add knowledge to my own thoughts on how to define the essence of landscapes and landscape representations. To examine the meaning of each design stage may suggest a different way of looking at landscape design and also landscape designers.

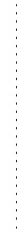
After Abstract

- * Thinking with Concerns
- * Thinking with Questions
- * Thinking with Readings

On reflection of the way I represented site conditions, I did not demonstrate clear and deep thinking in my process of looking. I represented the site analysis with a presentation of photos, map layers, and data. Some of them were useful in introducing future design strategies, some of them maybe not. Thinking about the original meanings of photos, collages, and maps, what purpose should they serve?

Rethinking the representation of landscape starts with looking at a site. We need a deeper thinking design process and we must improve our information synthesis and transformation.

LOOKING

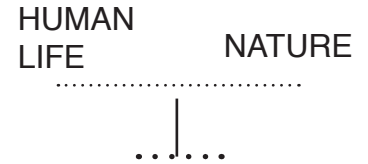


THINKING

Searching for a Method for Looking

“Shifts are taking place before our eyes. Landscape artists and architects need to give them a name and make them visible.”

(Balmori 29)



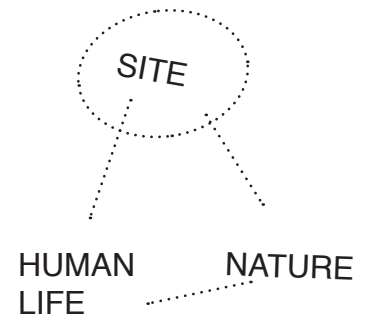
Looking doesn't just start when a designer comes to the site for the first time or looks at a map. Looking starts with how a designer values a landscape.

Increasingly in recent years, because of environmental issues, some landscape designers have begun to take a larger part in restoring eco-balance; some designers take a larger role in improving living environments and satisfying human demands. From my point of view, landscape design is not only about restoring the ecological balance or satisfying human life requirements, or even just making a beautiful view. Landscape design must provide an opportunity to forge stronger relationships between nature, human life and the site. Better relationships can lead to better future.

Michel Conan (*Forward* par. 3) states on tomorrow's landscape:

“establishing tomorrow's landscape demands a new level of understanding of nature, focus on mutability rather than on equilibrium.”

It is too broad to look at the problem as a common issue between nature and human life. The site is not nature, the site itself has a relationship with nature, and the site itself also has a relationship with human life. To look at these relationships separately, questions are raised such as: how does the site survive in nature, what is the narrative between the site and nature, how do the natural systems connect to the site, how does human life engage in the site and what are the histories between the site and human occupation? In the future, what may change between these relationships?



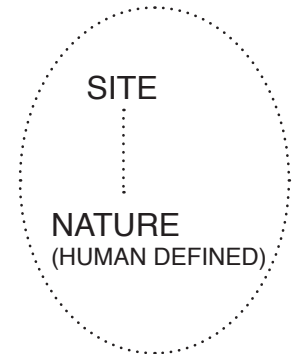
The “two-relationship” looking method

I believe that every design project has an invisible motivating power, a problem or a demand or both. Some designers would prefer to think about the problem and the demand as a starting point to start the site analysis. This way of looking could miss a lot of important but invisible things of the site.

How could we look at a site and make design decisions without missing the invisible things on the site? I propose a way to look at a place and named it the “two-relationship-looking method”. This method of looking starts with thinking that maybe designers could start without a purpose such as a problem to be solved or a demand being made in looking at a place.

The “two-relationship-looking method” suggests looking at the site first, for a short time, trying not to think about the problem or the demand for that design project. Think about the relationship between the site and the human, and non-human nature. Ask questions via these relationships: has this relationship ever changed? When did the change start to happen? Then, think about the problems and demands with these relationships and ask questions such as: have the changes brought the problem or demand about and what can the future relationships be?

After these investigations, designers could continue to find the best design intervention between human life, nature and the site. In fact, design is not just about problem-solving or meeting requirements. The whole process of looking at a place could be a more completely narrative with time-related thinking.



Landscape Representation

In this practicum I will talk about landscape representation within the design process. When I named the practicum “Representing the Invisibles of Landscape”, I was not only wanting to refer to beautiful drawings of a design. I will not talk about the techniques of drawing a plan, section or elevation or explain a “good” way to render a landscape design. As an emerging designer I must learn that design is not simply to follow other people’s routines for drawing and thinking but finding my own way. While the main purpose of this work is to discuss looking at a site, at the same time I also show my process of honing skills in more careful observation using my way and hopefully this will inspire others in honing their own processes of working.

Representation is a design in itself but it does not demonstrate the temporal nature of landscape. There is no formula in representing a place but one needs to be flexible and avoid being fixed on the representation as if it were a stopped frame of a motion picture. Landscape Architect Diana Balmori thinks that nature is a dynamic manifold of relationships between physical and living forces not subject to any teleology (Conan, *Reinventing* 35). Thus the representation of landscape may aim to talk about these relationships.

In the representation of the Floodway, I have not mentioned all the readings, preparations and methods employed during my many and ongoing site visits. I am a person, a visitor, an enjoyer, a design student. I am Mengyi Li - all of which helps a lot in reading the place differently.

LANDSCAPE
REPRESENTATION

MYSELF

THIS WORK

Why I Chose the Red River Floodway?

Landscape is a mystery with a lack of understanding. Because landscape is constantly changing with time, buried with culture and narratives, varied in scales, landscape is difficult to represent.

Landscape seems to be far away before it comes clearly into our eyes. **The Red River Floodway** as a landscape is an interface between visible and invisibles, city and rural areas, human and nature.

Winnipeg's Floodway is like a landscape visible in memory maps but invisible to our eyes. It seems not to be emergent in Winnipeggers' lives. We know It is working against floods. However, It is far way from urban communities. Currently, the main function of the Floodway is only to save Winnipeg from a flood.

There are not many people visiting the Red River Floodway. It is a huge landscape to which people are oblivious. It is a place in people's minds but invisible to people's eyes. Where is this place, how does it look? Is it because the Red River Floodway is not valuable enough for a visit?

In order to dig out more invisibles of the Red River Floodway, in this practicum, I will make experimental representations about the Red River Floodway in Winnipeg.

LANDSCAPE

.....

TIME,
CULTURE,
NARRATIVE

.....

VISIBLE &
INVISIBLE

.....

UNDERSTANDING

.....

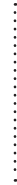
THE FLOODWAY

What Are the Invisibles?

Invisibles can be culture, narrative, history, data or something we could not see through a human's eyes directly but may be in some level reflected in landscape before observation. There may be more things - like time going through a site. Everything is as an energy floating around the world. Landscape is constantly changing. Invisible powers inside landscapes are always floating around. Uncertainty is always there. This is the most difficult part for a designer - to see the invisibles.

In order to see the invisibles, the designer needs to connect his intimate interior mind and emotions with the exterior world. The question is, how does a designer construct this connection.

INVISIBLES



A DESIGNER'S
INTERIOR

Why Try to Represent Invisibles?

“The word paysage means landscape and much more, conveying qualities that are both visible and invisible. It refers not only to issue of environment and ecology but also to the mood of an entire nation, to its changing sense of identity and cultural belongings. There is thus a deep sense of temporal continuity that pervades the idea of landscape in France.”

(Giroi par.1)

I hope to reveal the potential characteristics of a place as much as possible and expand the knowledge of their effects on the design. For example, how to reactivate the cultural dimensions of the site? The visible are relatively easy; they give the appearance of a landscape. Invisibles depend on each person's interior world to observe and feel the effects of a landscape. It is difficult and delightful to begin to understand the world and those invisibles. They demand your thoughts and your soul to do the hard work and for you to be sensitive, perceptive and honest.

Discovering one's interior world may be said to be individual and subjective, yet a designer knows that every human uses all of their senses to comprehend the surrounding environment. The experience and intuition of a designer is important in design research, therefore, looking inside oneself is as important as looking outside of oneself for sensitive, thoughtful and appropriate design solutions.

In addition, how deeply a designer knows a site is based on how many invisibles they feel they have discovered as well as the visible which must also be seen and studied for more than just their face value. Therefore, one important step for every design student to learn and to practice is looking and attempting to discover the invisibles of a place.

INVISIBLES

.....

POTENTIAL
CHARACTERISTICS
OF A PLACE

<<Distance and Engagement>> 2010

Discovering invisibles behind the scenes needs practice and time

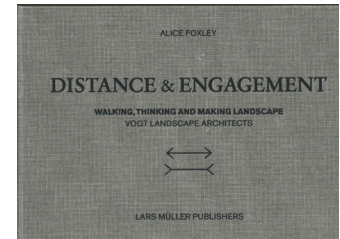
“We are more interested in a debate that engages what is going on behind the scenes - the process of fruitful meanderings, of voyages of discovery at the periphery, of paradigms that incorporate both urban and landscape environments - than in end results reduced to what is important and appropriate.”

(Foxley 1)

Meandering to find out invisibles is a skill which needs to be practiced by designers not just in their designs but also in their daily lives. This is a whole process more than just doing drawings and models for the audience.

According to Vogt (Foxley, *Walking* par. 3), designers are not just the authors of a design but also visitors of the space they design. Therefore, during the meandering, the internal experience of every designer is important and affects the final design. The practice of meandering and investigation of invisibles helps the transformation from looking into planning.

In addition, the more invisibles that are discovered, the more potential of a place will emerge, and the more diverse the public that will use the place. This process needs time to approach. People need time to settle in a new place, designers also need time to read a landscape.



Drawing is A Process of Thinking

In talking about looking, I would like also to talk about drawing.

Design is also drawing through creative thinking. It is a natural process of engagement with eye-hand-brain coordinated together. In the book of Drawing and Reinventing Landscape, Michel Conan comments on Balmori's drawing experience:

"building upon her own experience, she explains how drawing constitutes a way of engaging the eye and the mind in an exploration of the natural world and of disentangling oneself from sophisticated and misleading habitats of thought."

(Conan, *Drawing* 12)

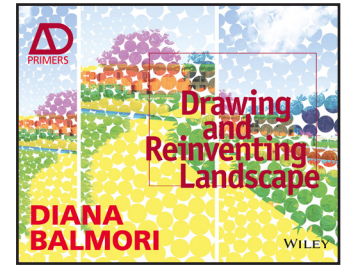
And Balmori explained her experience in the book:

"The physical response to what you look at is vital; it activates the seeing, and you do not see as much without it. It is the interaction between intense observation and the hand which tries to interpret what is being observed, editing and shaping it in the process, that the pleasure of drawing or painting lies. This seems to imply that you draw what you see."

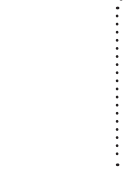
That is not the case; you interpret what you see, editing, cutting out everything you are not interested in distorting also in order to give the feeling of what is important apart from what is being seen."

(Balmori 37)

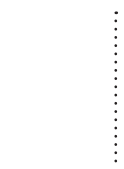
There are many kinds of instrument for drawing and designers have a lot of new technologies which can be used. This gives designers more choice and possibilities in representation, but also brings confusion about making choices for drawing instruments. Diana Balmori describes her idea in choosing a drawing instrument:



LOOK (EYES)



DRAW (HAND)



THINK (HEAD)

“In other words, the result of what I like to call my ‘lookings’ will be very different if I am drawing with a pencil or a pen, if I am painting with a brush, or if I am using my fingers on a computer screen. The difference even begins with what I select to draw; certain things are captured better by one medium than by another. Therefore, the connection of landscape to painting is not just an interesting historical fact.”

(Balmori 39)

For me, drawing is not just an interesting hobby, but also a way I use to communicate with a place, or a site. Because the natural love of using drawing to represent a place, making the communication between me and place more valid in design.

<<Sketchbooks of Lawrence Halprin>> 1981

Drawing and Transmutation

“Drawing, then, is to the artist the process by which meaning emerges from visions, by which the observations of realities and the play of the imagination can combine to transform both into another quality or aspect of art.”

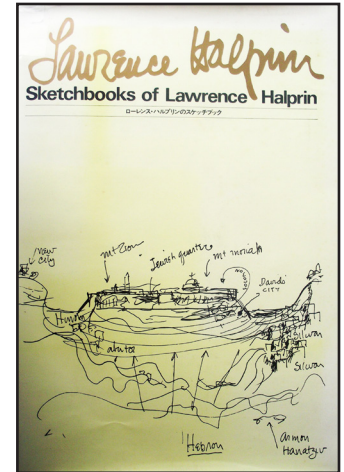
(Burn 10)

Drawing seems to be a tool for transmutation. This is a transmutation making the “seeing visions” connected with the thinkings of the designer. This is a process of discovering the reality of the essence of a landscape. Also, this is the process which aids the emergence of the “meaning” of a designer from the visions.

This intimate experience is crucial for a designer to practice. Sometimes people draw nature with the sense of giving shapes and colors of the object, sometimes people draw a feeling or an emotion of the object. The first kind is what people use to draw, the second type is what people need to practice.

This is when drawing can be called as an intimate art. This art is an expression of the invisible interior mind and emotions of a designer.

People think differently. To understand how you are influenced, how you see, is an important part of looking (Halprin 7).

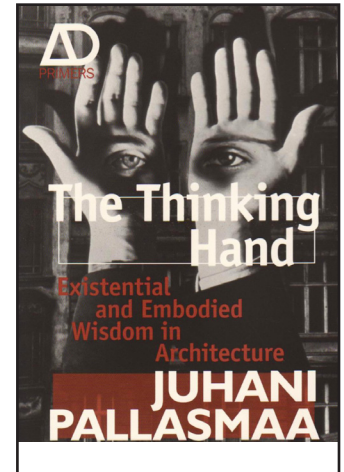


<<The Thinking Hand>> 2009

Take a Risk and to be Aimless and Unconscious

"This is what I do - sometimes quite instinctively. I forget the whole maze of problems for a while, as soon as the feel of the assignment and the innumerable demands it involves have sunk into my subconscious. I then move on to a method of working that is very much like abstract art. I simply draw by instinct, not architectural syntheses, but what are sometimes quite childlike compositions, and in this way, on an abstract basis, the main idea gradually takes shape, a kind of universal substance that helps me to bring the numerous contradictory components into harmony."

(Pallasmaa 73)



Designers in the process of design, need to take time to get away from the design purpose and intentions to take risks. Sometimes designers are afraid of uncertainty and subjective analysis. However, careful calculation, experimentation, research, and prototype tests seem to be standard and somehow constrain creativity in design.

In some work, researchers do not need to have certainty in what she will find. She may have a plan but without a detailed proposal. She may even not find anything at the end. This is what people call research. In addition, this work indicates the researcher's love, value, and passion; this is the reason why the researcher wants to take a risk. This risk also gives the researcher a self-identity as a designer.

<<Recovering Landscape>> 1999

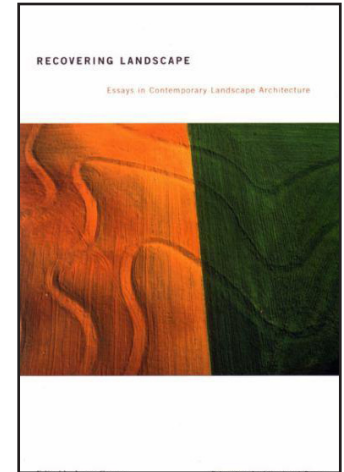
The Four Trace Concept by Christophe Girot

In order to help one recognize site through design, the French landscape practitioner and teacher Christophe Girot (par. 5) presented the “Four Trace Concept in Landscape Architecture” which serve as tools for landscape investigation and design. This concept is extraordinarily helpful in looking for the invisible.

These four traces are: landing, grounding, finding and founding. According to Christophe Girot, it is important for a designer to acquire an understanding of a place that will enable him to act wisely and knowledgeably. These four traces designate different attitudes and actions for designers in the process of design. For example, landing focuses on the process of discovery and inquiry of a site. This is a highly intuitive and experiential approach to look at the site. By doing so, designers will find out the potential of any given place.

As Christophe Girot suggested, this way of looking at a place is to excavate the potential of a place as much as possible and to use it for the future site design. Thus designers need always to involve themselves in the deepest exploration of the existing conditions, feelings, and reactions to every site and to integrate physical experience and intuition with their site research.

The Four Trace Concept addresses many of the previous concerns and questions in representing the invisibles in landscape, while it also complements the work of landscape designers. In the subsequent part of this work, I will borrow this concept in following a design process.



Landing

Grounding

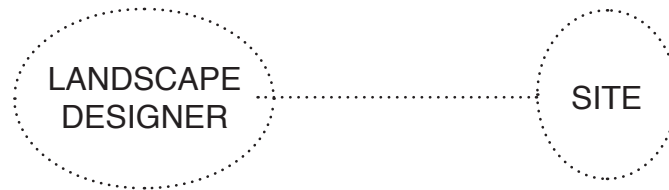
Finding

Founding



Site Visit of Red River Floodway

The communication between **designer** and the **site**



This process can be reflected on the first and second act of the four trace concepts by Christophe Girot - **landing** and **grounding**. According to Girot, **landing** is a specific moment when a designer still does not know anything about the place. Thus landing only happens once in the site visit and needs a particular state of mind to feel, perceive and think (Girot, *Landing*). **Grounding** can be the re-visit to the site. It can also be the scientific understanding and reading of the site without individual imagination (Girot, *Grounding*).

“Anyone who realizes landscape, who notices carefully enough to make it discrete and real, encounters a subject worthy of lifetime study in the open air and in libraries alike.”

(Stilgoe 4)

In order to show a way of deeply understanding the place beyond just doing research, one must go to the place, to perceive the Red River Floodway. A designer needs to build a relationship with the place, and learn to be curious, passionate, strong and intensely connected with the surrounding environment. This may sound like a familiar process however, a detailed dissection on the process opens up uncommon avenues within common sense.

In Wright's book (8), the establishment of a relationship with a place is called “co-creative science”. Which is aiming to obtain the involuntary input of nature. This is different from just “working with nature”, but helps to develop a relationship with the place.



"Walking proves pleasant in a mediated age. Away from cinema, television, video, and computer screens, and away from headphones and cell phones too, the walker courts discovery."

(Stilgoe 4)



Walking

A landscape architect will always be fortunate to have many chances to walk outdoors in her life. To be a landscape architecture student coming from China, taking a walk outdoors in such a healthy living environment itself is a lesson about landscape. Canada is the place where I learned to love to be outside and to realize and experience the environment. For a landscape architect, there is no reason to stand in front of computer and spend lots of the time indoors to approach a design.

Walking in a site is more than glancing around. The way a designer walks in a site might be similar to a yoga practitioner who, during the practice of yoga, must relax as much as possible; so must a designer in walking. The relaxation helps the designer sense a place well and forget herself.

“Physical exercise needs space, but a little spice helps it along. Walking and looking around flex muscles and lungs, and eventually stretches the mind too.”
(Stilgoe 4)

Walking in a strange landscape one sometimes encounters fear. But this fear happens only in the beginning of an initial site visit. From my point of view, in order to avoid the fear, paying more attention on the site, taking photos during the site visit, is vital. It is exhilarating to look at a strange place and discover its unfamiliar beauty through photo - taking. These photos can evoke powerful memories for the designer.

Walking on the Red River Floodway

In the walking of the Red River Floodway, thinking did not play a large part in the first walking of a place. The designer when walking is an enjoyer and a spectator.

Walking on the Floodway, I forget that I am a designer coming to the place. However, I am also not just a visitor to a beautiful landscape. The perfect condition is to be a piece of flowing power, moving with the wind, moving with the water, thinking as the snow, speaking with a goose, or shaking as the grass.

Before I visited the Floodway, I imagined it having a deserted appearance. I was excited to discover that there were so many plants in the channel of the Floodway after the snow melted. And there are so many unexpected traces of human and wild animals. This place has a wonderful and unique beauty.



On March 11, 2015, the snow seemed to be thinner than before. I went to the Red River Floodway and took a walk. It was such a beautiful day, light wind, sunny and the sky was blue with cotton-like clouds. I walked the whole way from the top of the channel to the bottom part. The vegetation surprised me at that time. I saw the trace of a snowmobile. Because of the fine weather, it only took me 12 minutes to walk into the middle of the channel.

The 2nd Walk





On March 23, I saw some geese flying in the city. I wondered if the geese were emerging from the Red River Floodway so I took the second walk to the Red River Floodway. The scenery was impressive in weather like this.

The 2nd Walk



Snow water was floating on the land and formed a stream in the middle. The wind was strong on that day and some geese were singing and walking on the floodway.

March23. 2015

Photo Taking

Photo-taking is different from photography. It is not done to mold an appearance of a place shown in the designers' eyes, but to record first-hand impressions. According to Ghirri (17), photography is a sign of a tension between reflection and reality. This is a process connecting a site researcher and the reality of a site together.

In addition, photo-taking is a process like an encounter with a place through a lens (Shirritt- Beaumont 13). It may evoke powerful memories for future design.

This is a conversation between me and the Floodway. I perceive the place, its materials, scales and climates.

Photographing the Red River Floodway

In order to start the conversation with the Red River Floodway, I need to be super conscious in the process of photo-taking. I do not think of the Floodway as a strange landscape. I tried to love the place, the flood, the concrete, the huge channel, the soil and everything in it. I try to enjoy this place and to become conscious of its essence by starting with love.

Uncertainty and landscape design

On March 8, the temperature started to rise in Winnipeg, which totally destroyed my plan for this practicum. Snow started to melt and water came out of the road. I expected to meet this natural phenomenon in the middle of April. I expected to come to the warmed-up site with more research to be done. However, this is just Nature. We are not able to control or to plan Nature - though this is probably indicative of global warming. Uncertainty, is the first lesson that a landscape designer needs to be taught. We can design the site, however, we are unable to totally control the site.



Sky on the Floodway was diverse and capricious. The horizon of the Floodway always gives a clean scroll in the day. At night, residential buildings nearby the Floodway seem to be lonely and visible. Wild animals such as deer and rabbit hide in the dark and move around so quietly.





In winter, the Floodway was buried with snow in white. Not many people come to the Floodway and cars pass the Floodway at high speed.





Beside the entrance of the Floodway in south and the outlet in Birds Hill, the Floodway is blocked for entry, or it has the hydro corridor. Wildlife traces were found in the channel but residents could not use the channel at all in most areas.





The Floodway has a trail on the west side of the channel from the inlet to the outlet. It was called as the Duff Roblin Park. The gravel trail is about 45 kilometers long and has a lack of signage and facilities. Scenery along the way is beautiful while the micro-climate of wind in the channel made cycling very difficult.





Water, stream and stones are the main elements in the Floodway in Spring. Water becomes very clear after the snow melt. Geese, birds and dandelions are gradually getting into the fermentation process before summer.



Drawing and Myself

There are many methods employed in the representation of landscape. I choose to draw because this action helps me to transfer the information from eyes to head to hand.

Others may initiate thinking about landscape by other creative means: painting, sculpture, collage, film, video, music and etc. It is important for a person, and especially a designer to develop and utilize their own creative sources and their own unique memories in their experience and creation of landscape architecture conveying a sensitivity to the place and the people who experience it.

Drawing is not a hobby for me. When I was small, I was drawing without meaning but tried to sketch the shape of things. As I grew up I drew without thinking but tried to relax myself and be happy. When I got into design school, I tried to represent my design with drawings but with less happiness because I was self-conscious about my work. For the future, I wish to have progress to striving to know the essence of a landscape through drawing, and having the design process tied to my self-cultivation.

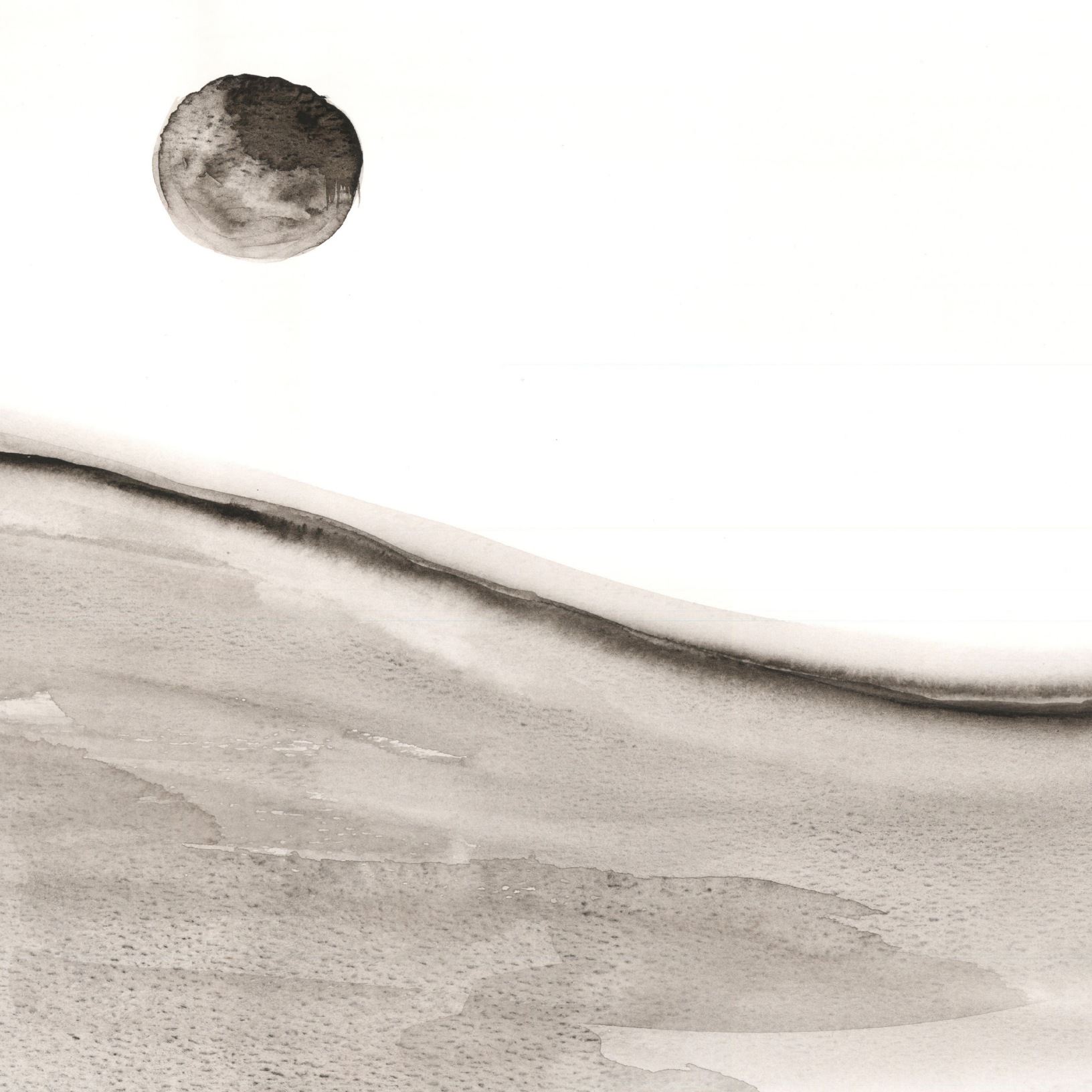
Drawing is the way I feel most comfortable when beginning to look at a place. It is an intimate experience. Many of the drawings record my senses, emotions, and intellectual perceptions of a landscape. There are different layers of thinking within all of my drawings. They can be with or without colour according to the purpose of the exploration. Sometimes, the sketch is a way the designer talks to herself. Without any particular intent. This manner of drawing helps me a great deal in understanding the site and building up a relationship with the site before I begin any design activity. This is a creative memory in design.

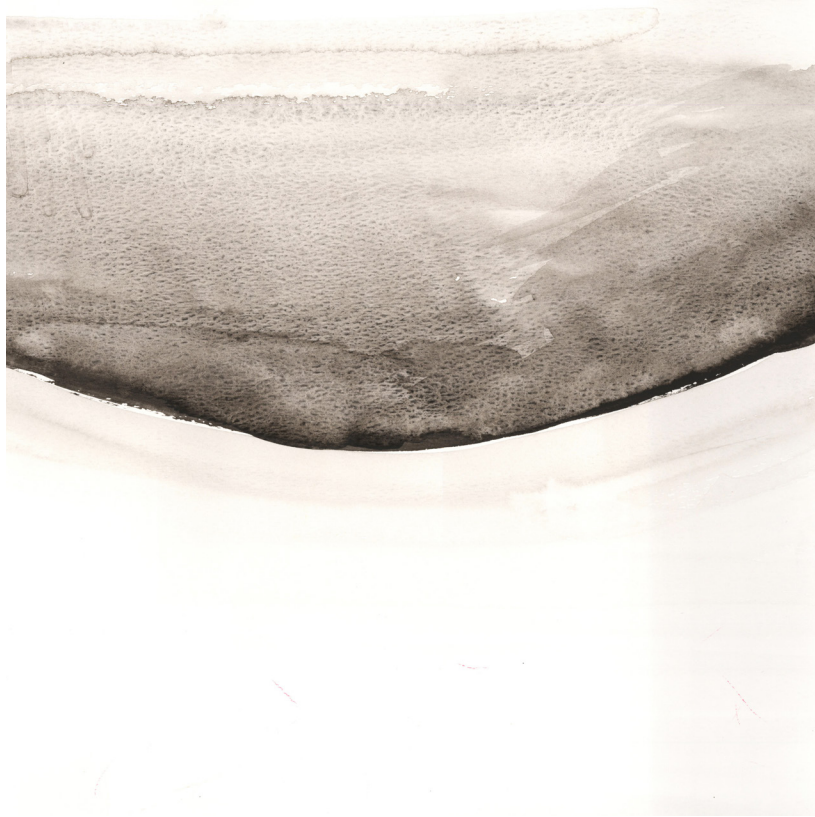
I want drawing to inform my design thinking in the future. I hope to set up a routine, in every design, where the communication I make can be documented as a memory for myself. These drawings may also be a source for people who will experience the landscape.

Drawing the Red River Floodway

The Red River Floodway is an environment that is both wild and urban. Visiting the Red River Floodway has given me clues to try to discover the essence of this landscape, its materials, colours, characteristics and the man-made and natural processes continually emerging and disappearing.

I talked to myself and drew, with the memory of the Floodway in my mind. What I experienced and understood is represented in these drawings. I made all the drawings in a cyclical process. I drew, revisited, came back to draw and visited again. These drawings included here were produced in a period of about three months. I continue to make drawings after designing which makes me know and love this landscape even more.



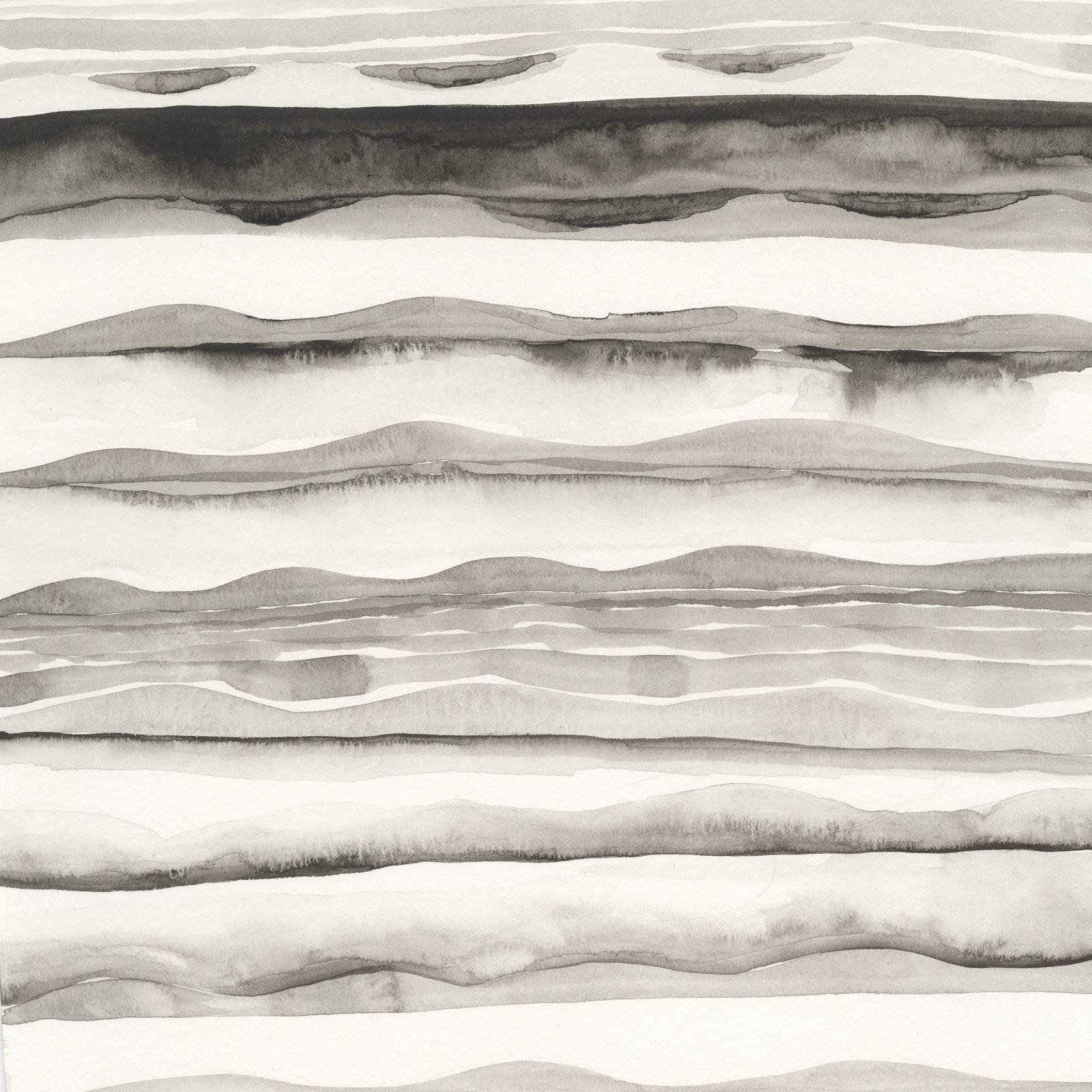


DAY AND NIGHT



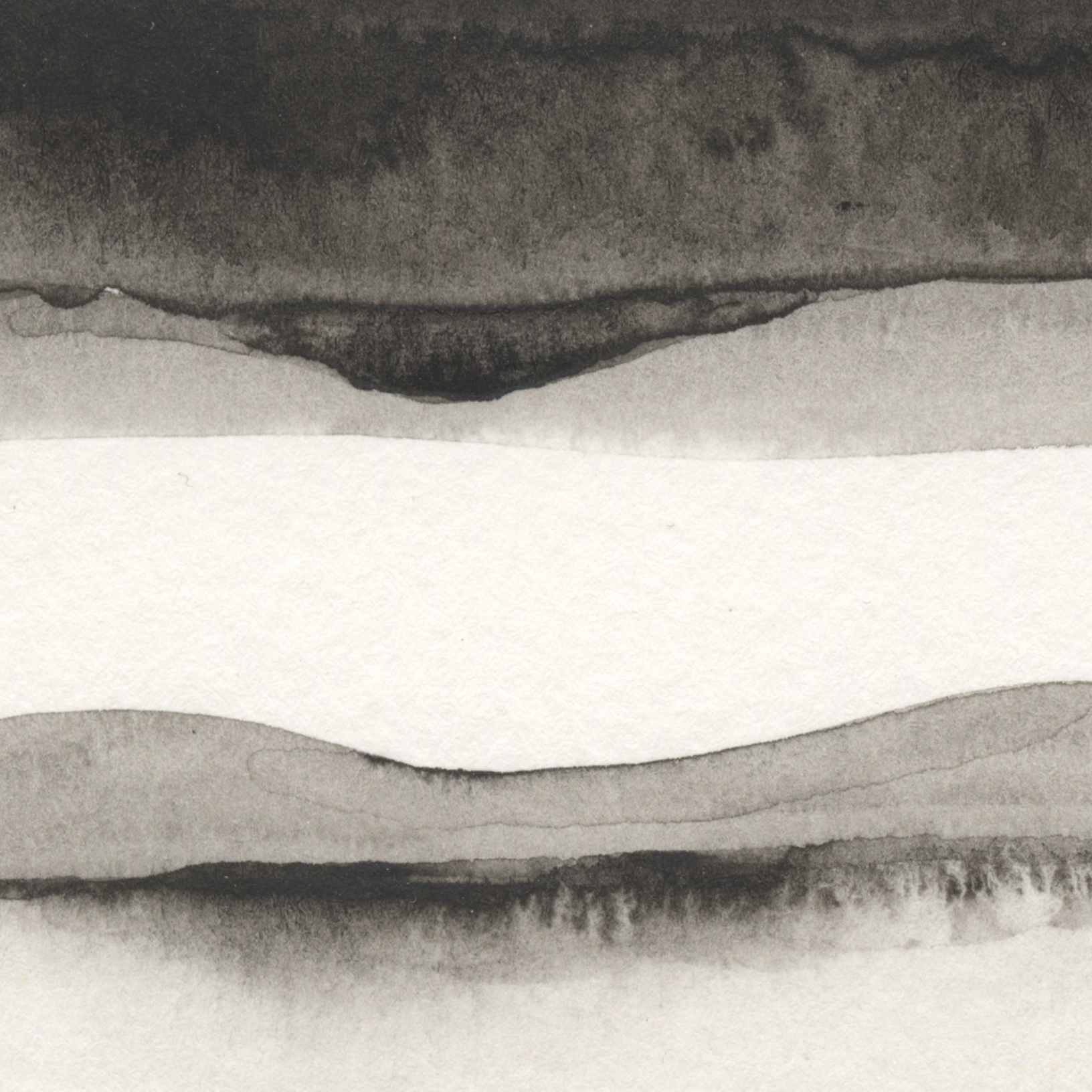
THE HORIZON

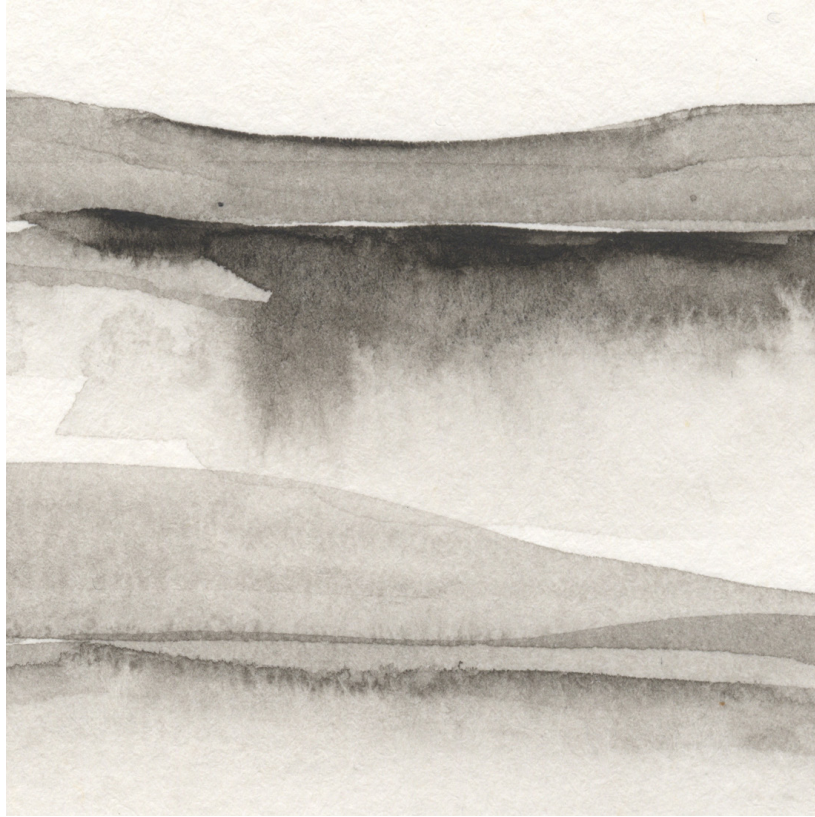




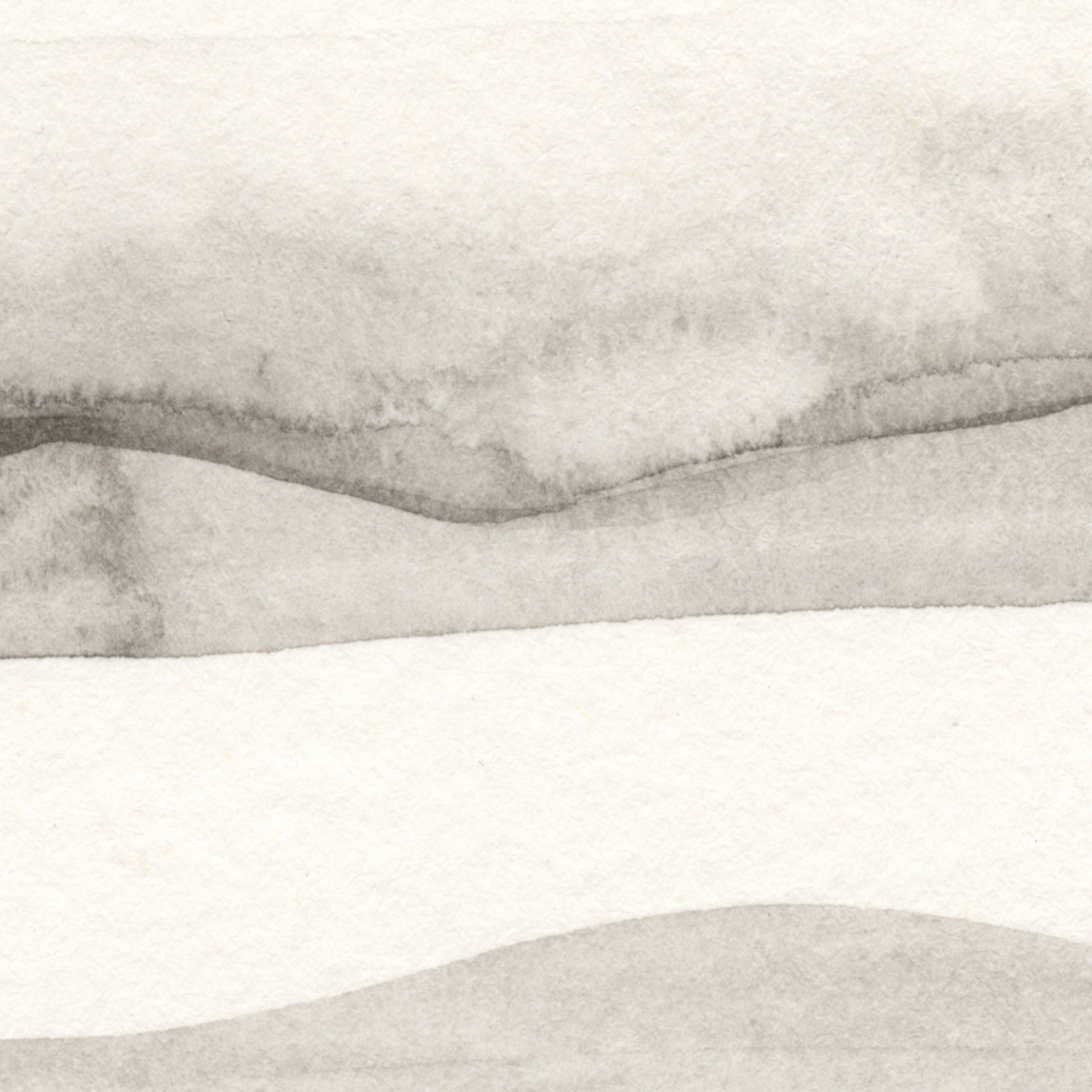


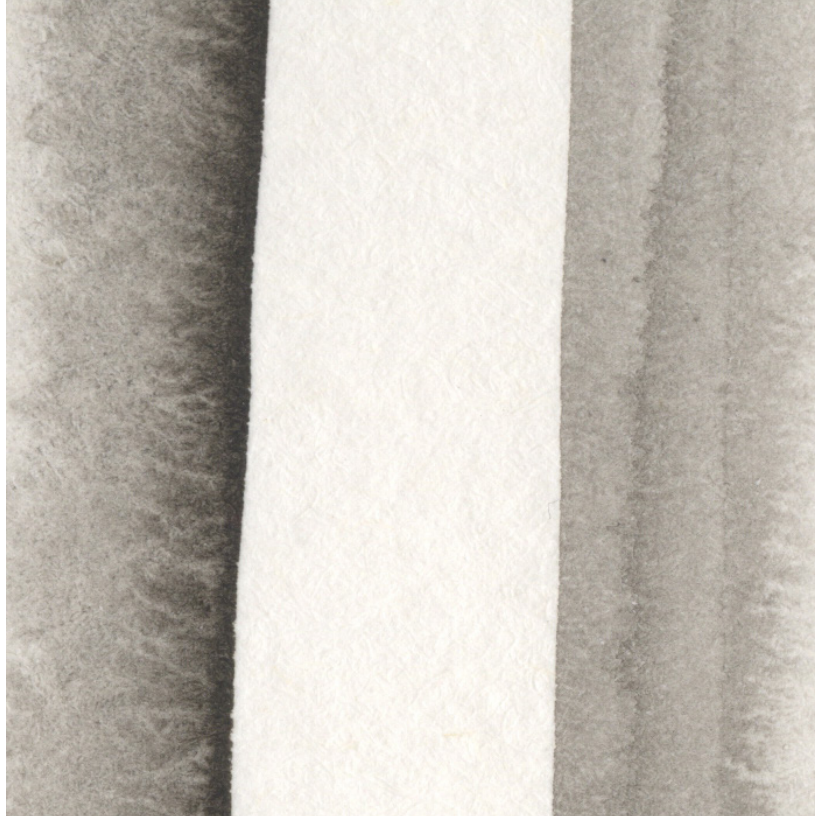
SECTIONS AND WATER



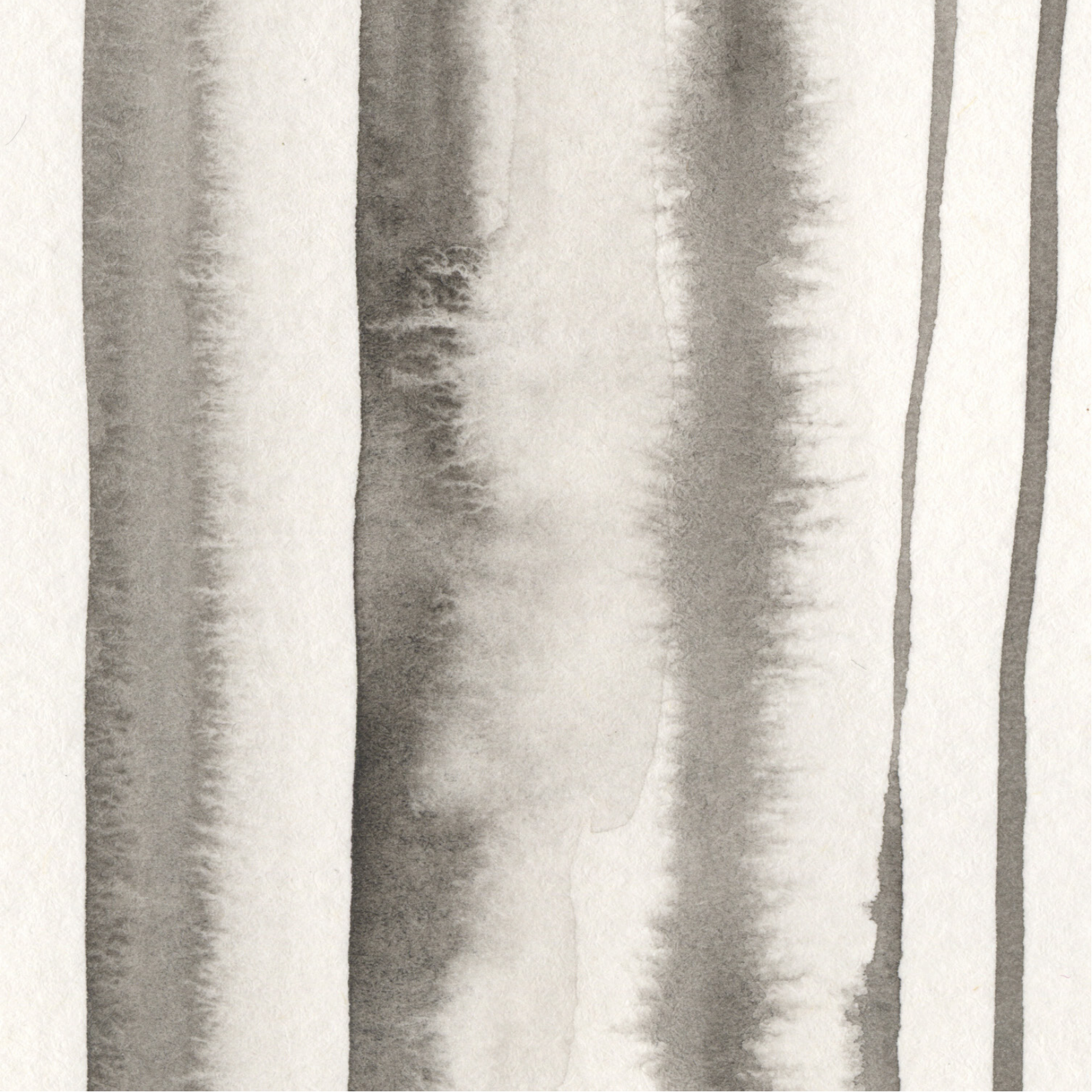


SURFACE WATER WITH GROUND WATER





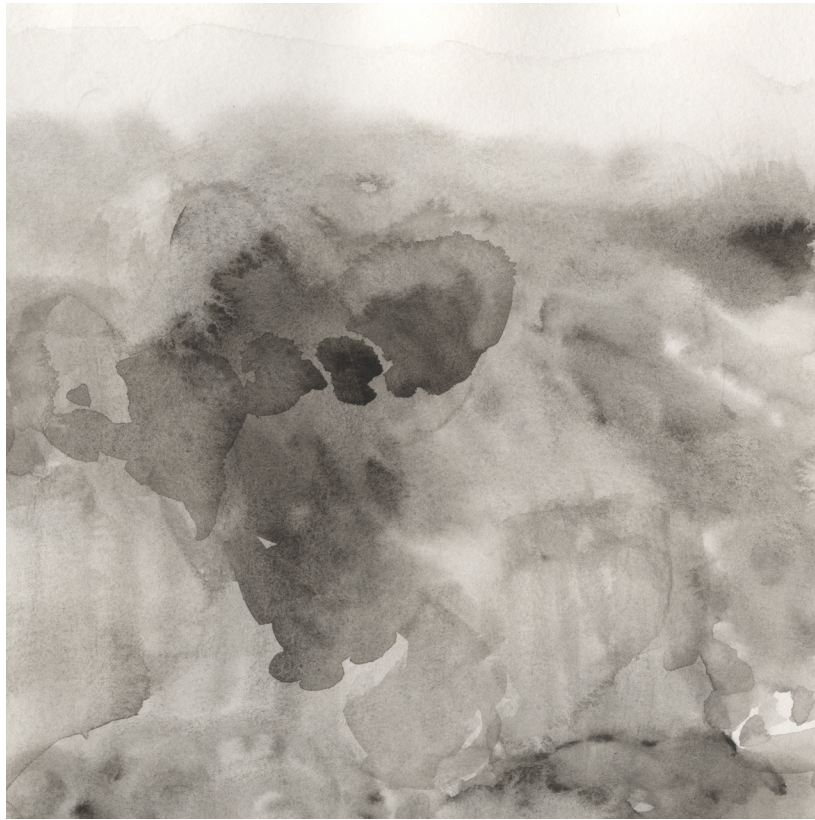
A TYPICAL PLAN AND SECTION



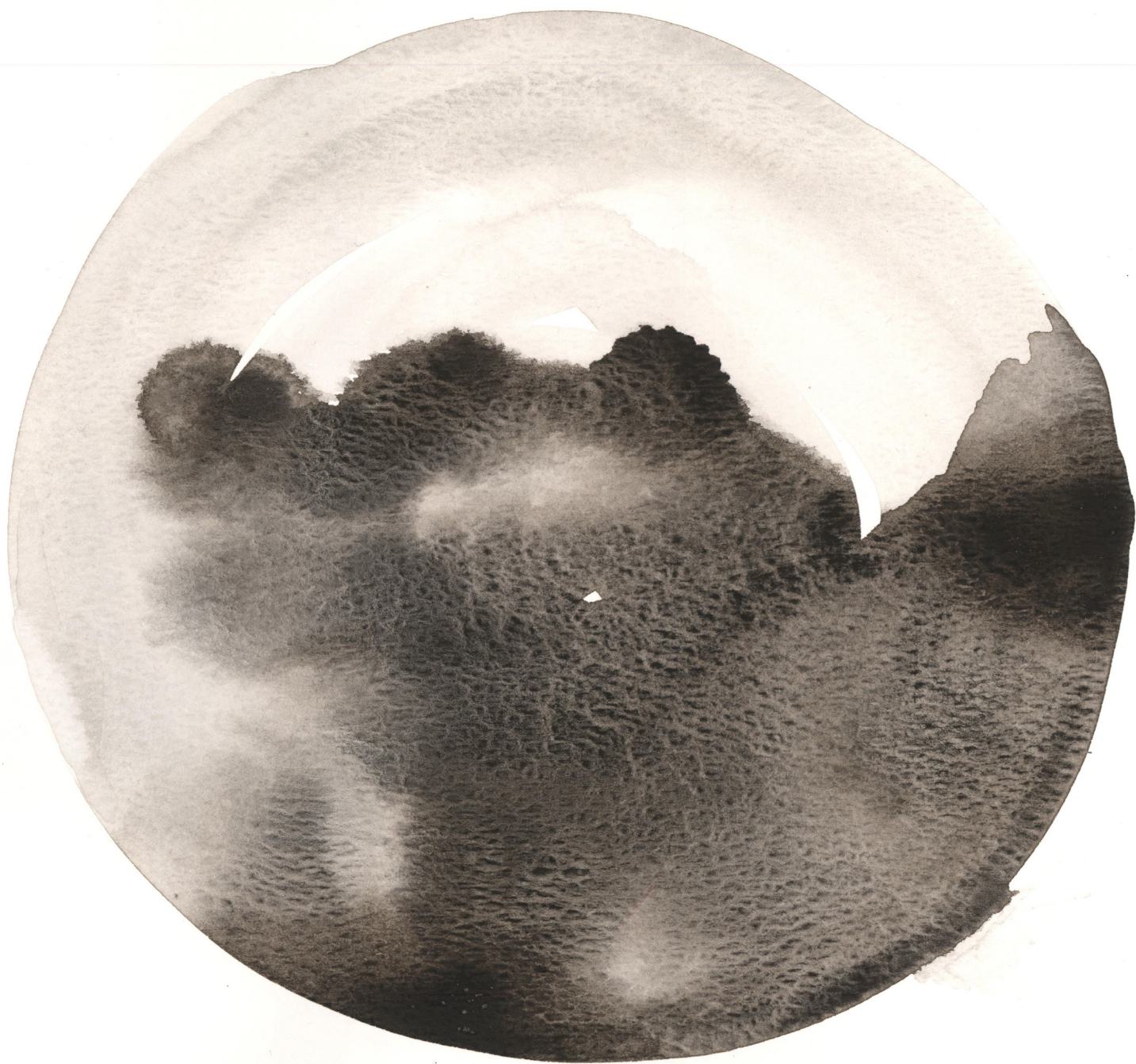


PLAN IN THE WATER



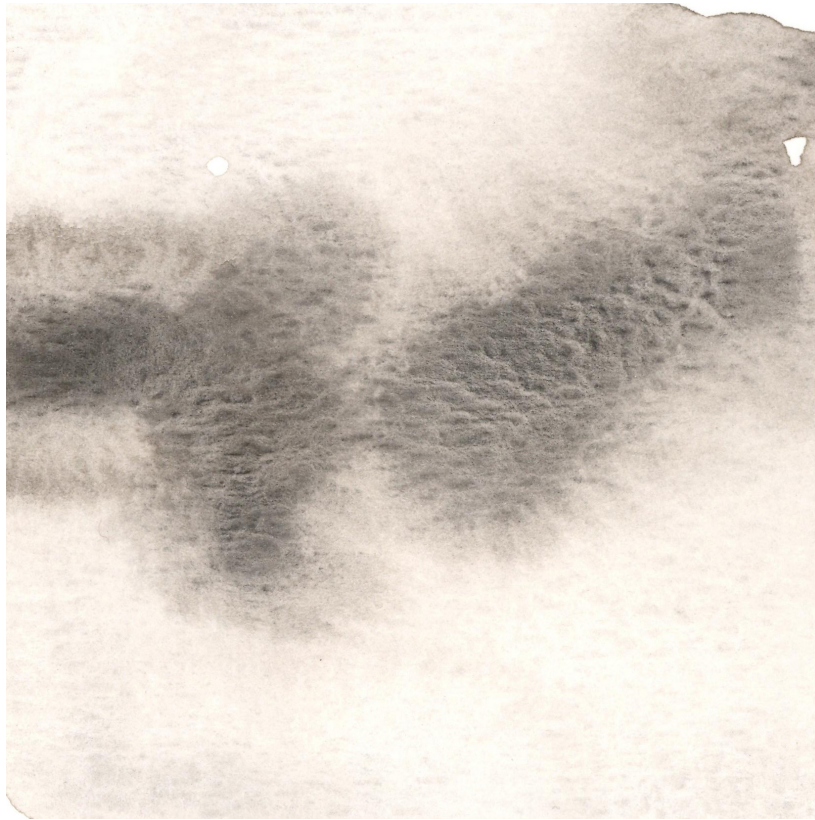


WTTT OR WITHOUT FLOOD AFTER SPRING

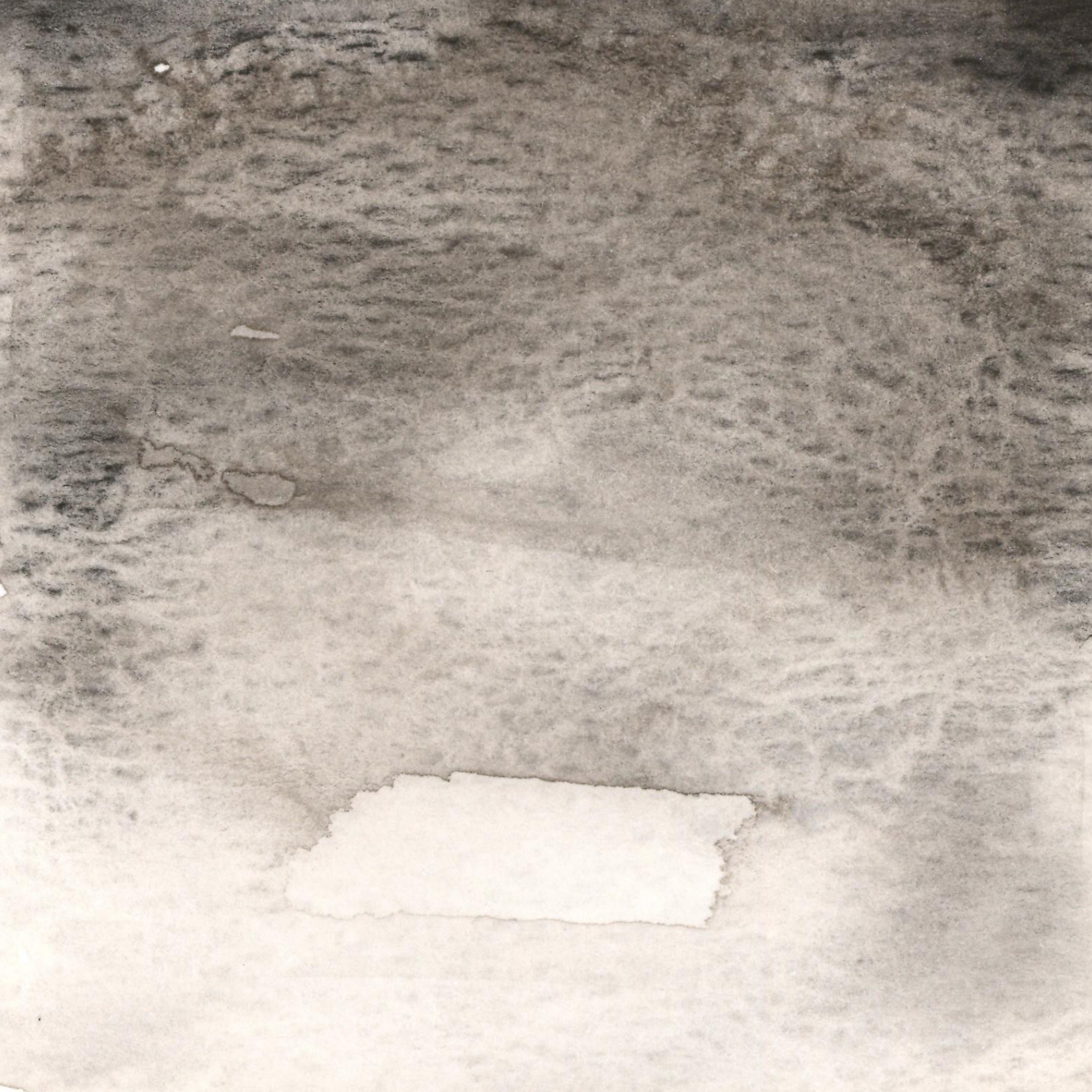


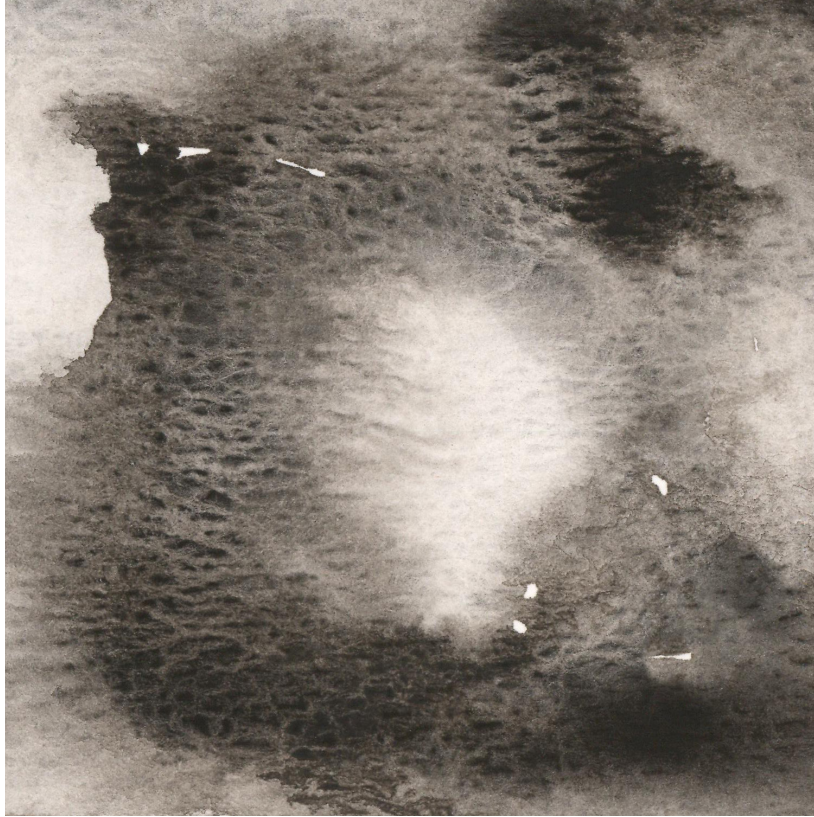


WATER DRAIN

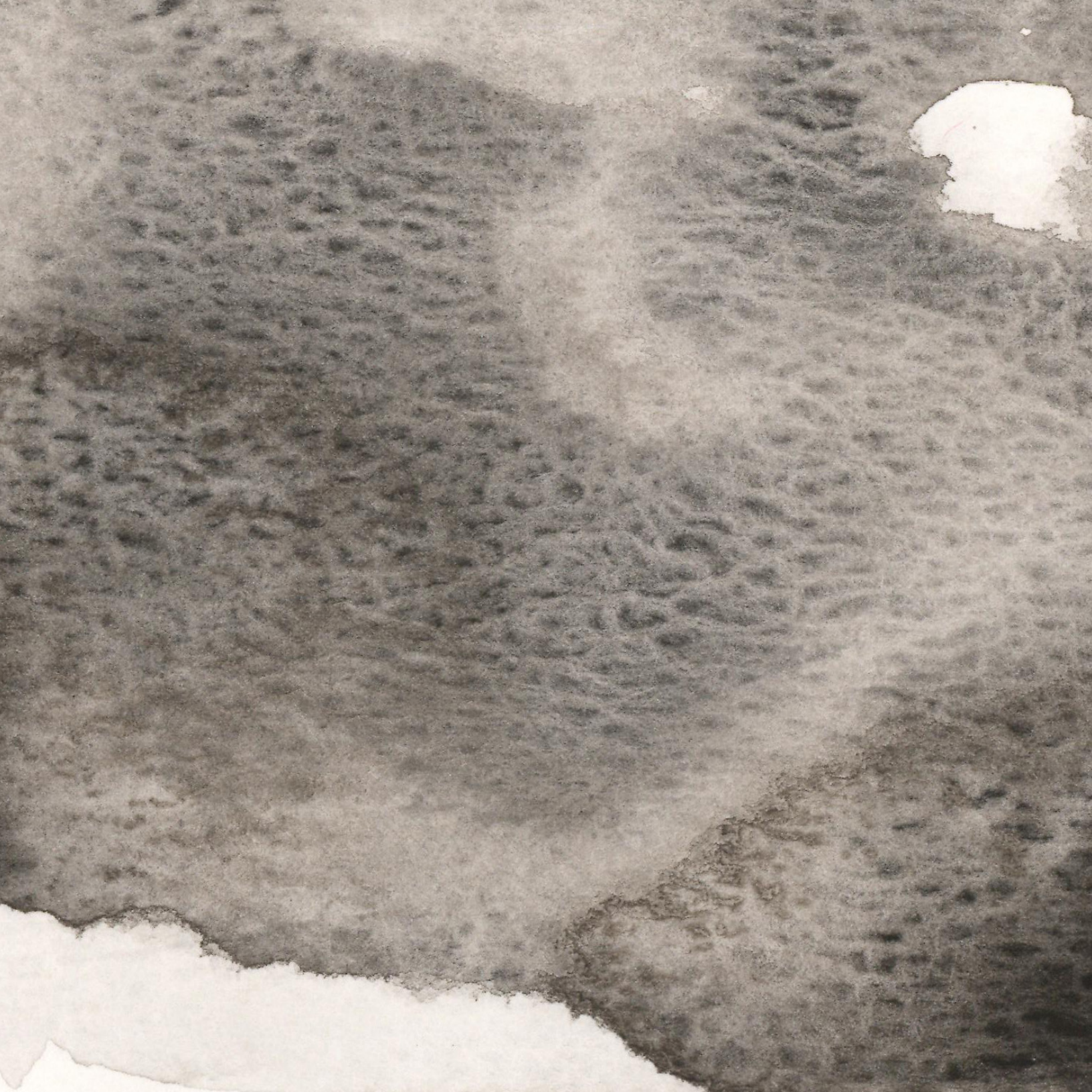


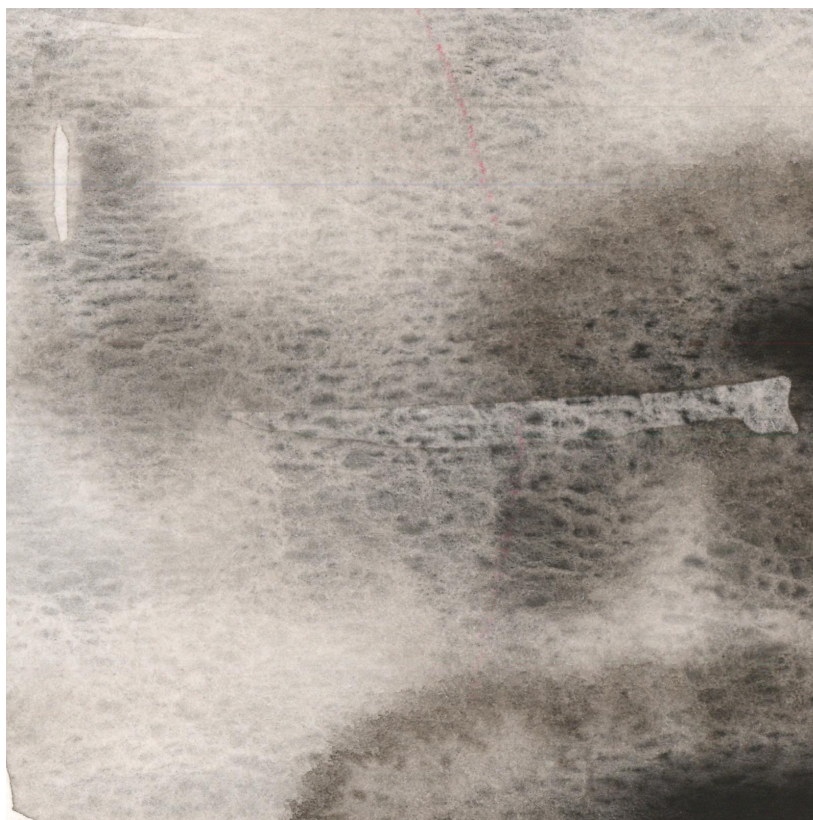
THE NATURAL FLOW



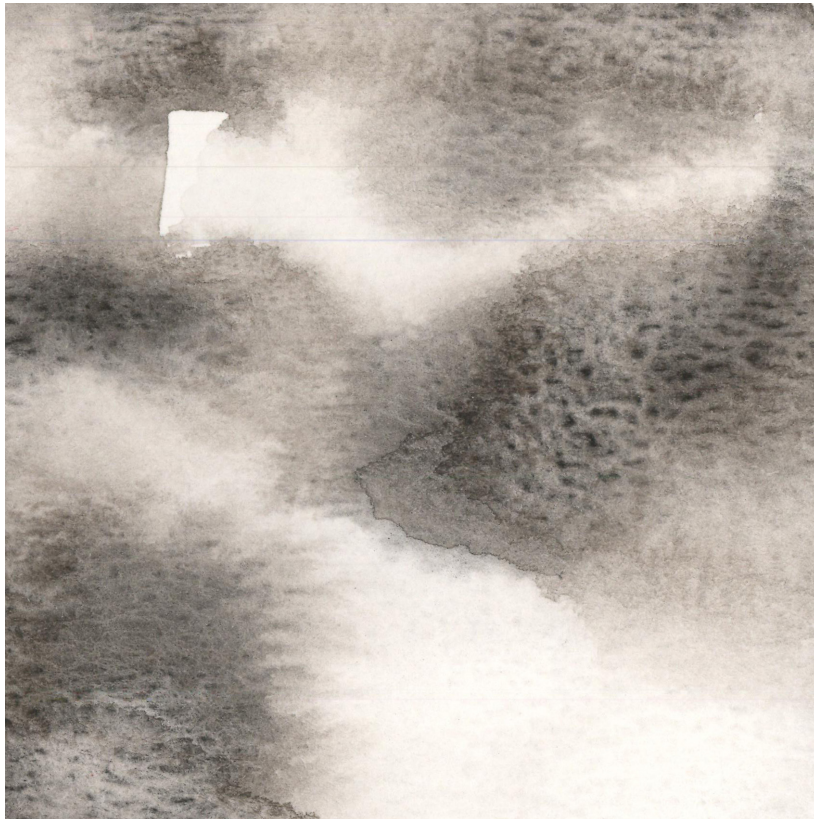


UNCONTROLLED PART





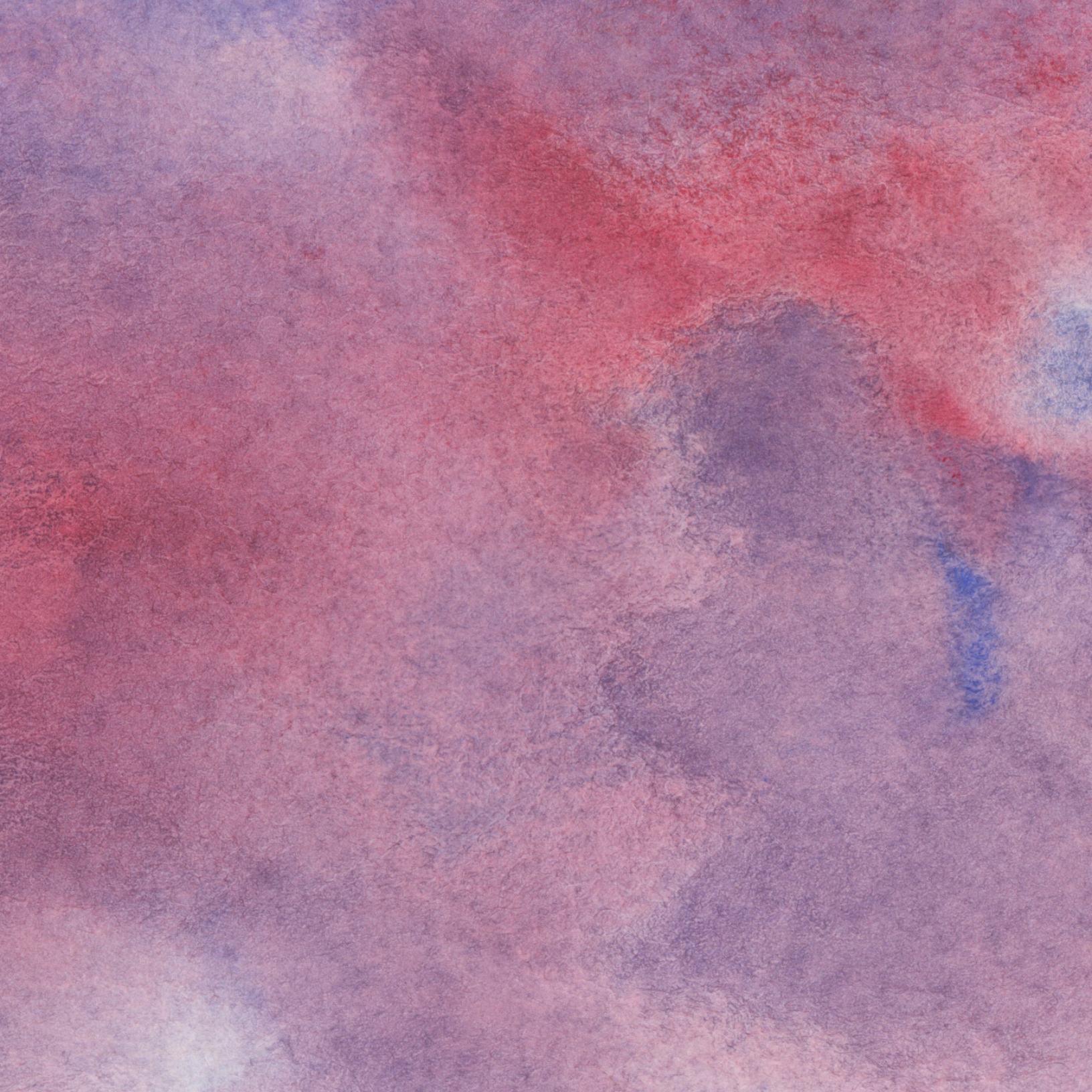


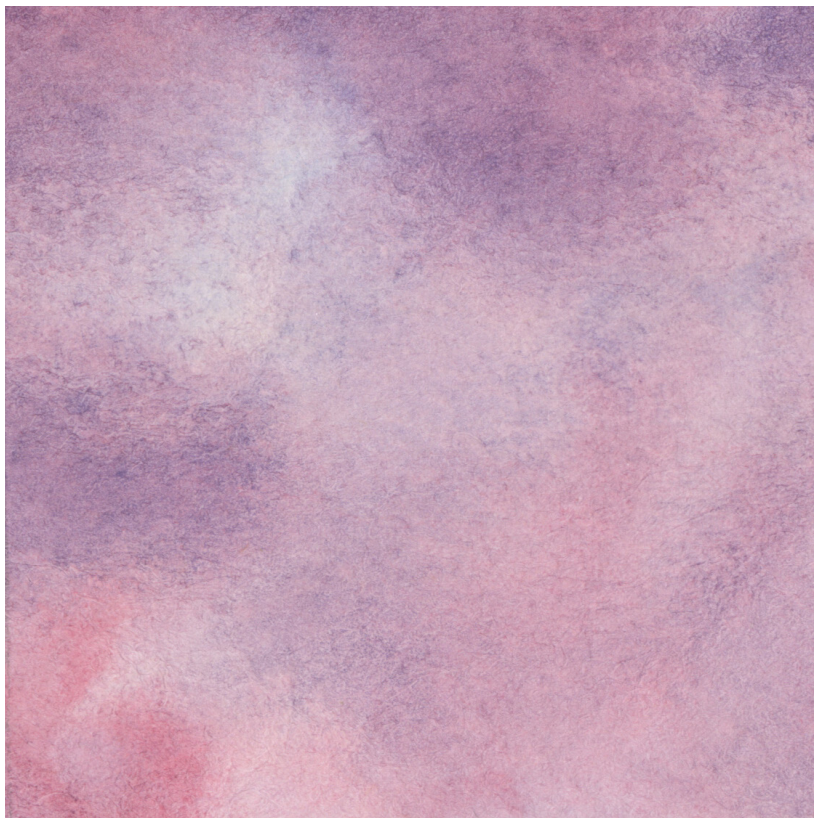


CROPLAND WITH WATER



SKY





SKY





MATERIALS IN FLOODWAY





A BEAUTIFUL ENCOUNTER





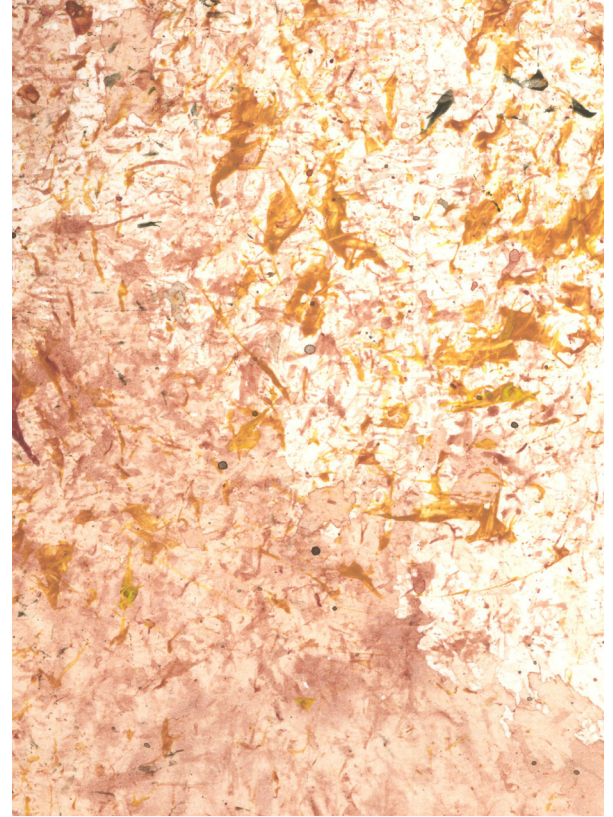
SECTION WITH COLOR





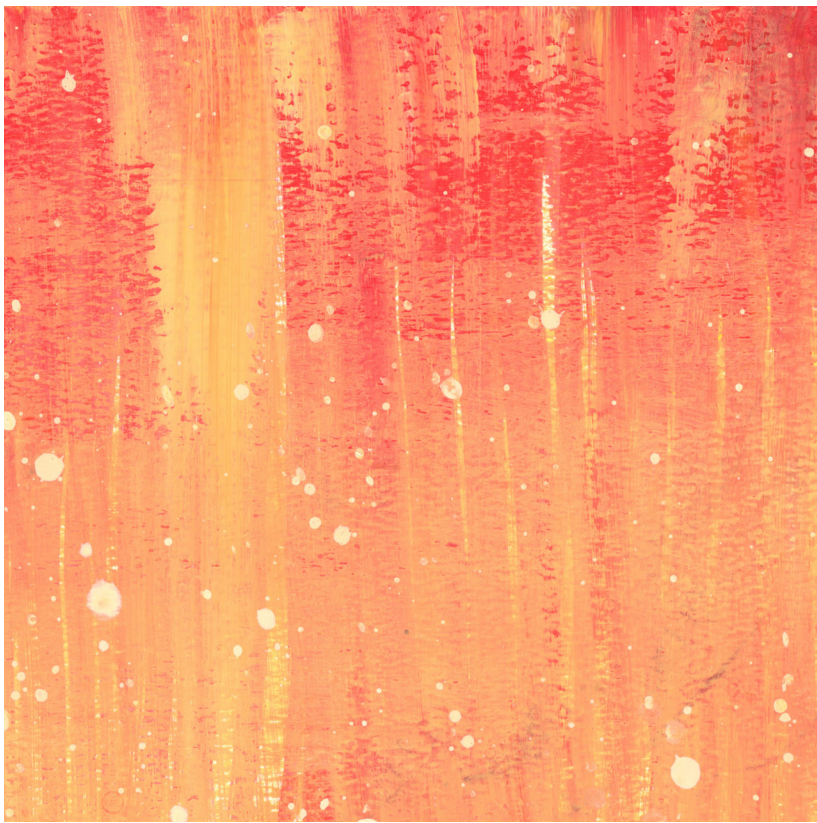
SECTION IN SEASONS



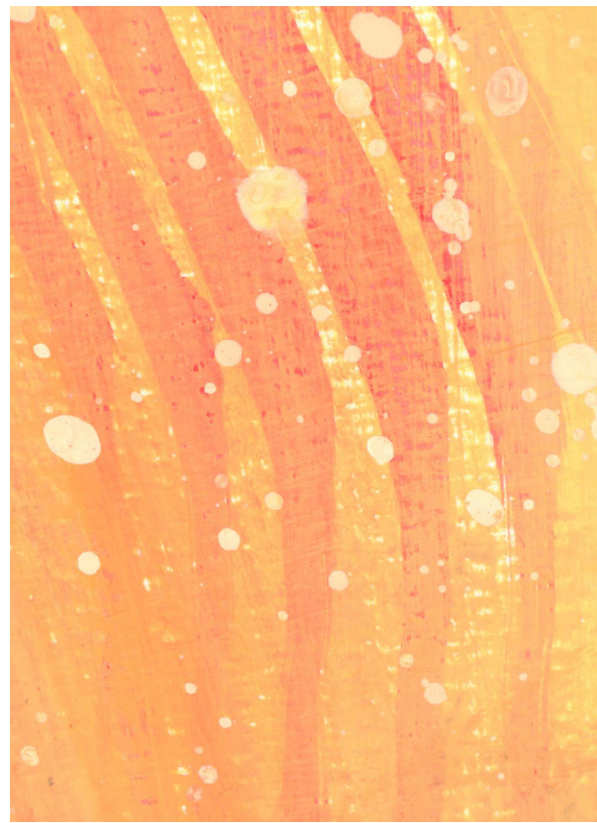


UNCERTAIN GROWING

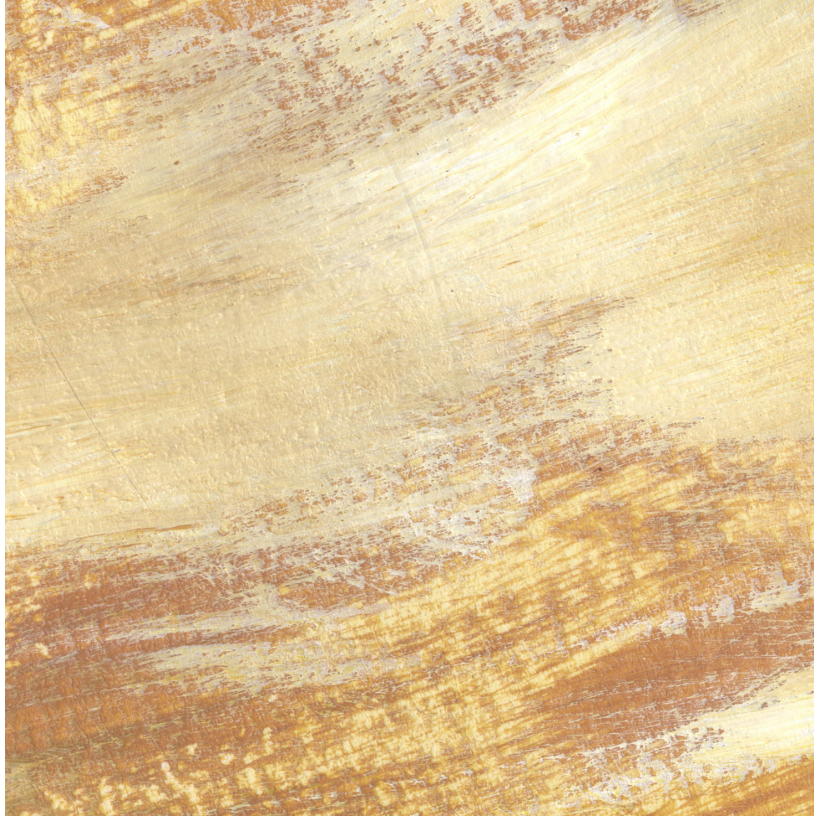




THE END OF WINTER







A BEGINNING OF SPRING

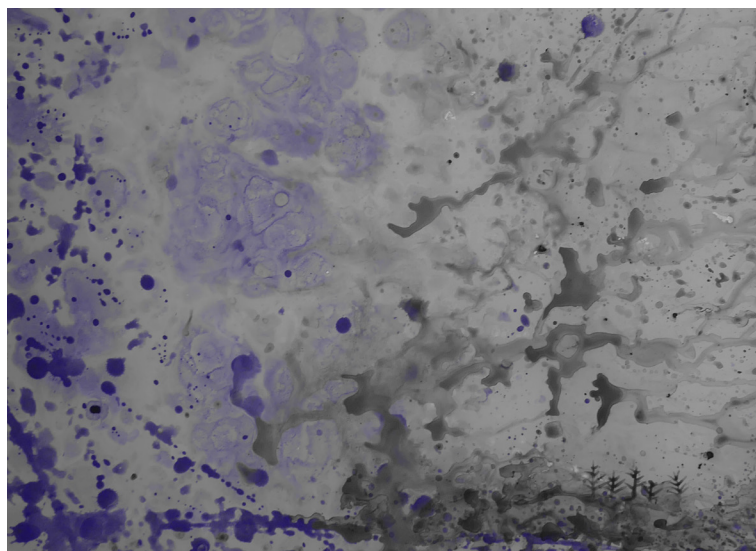
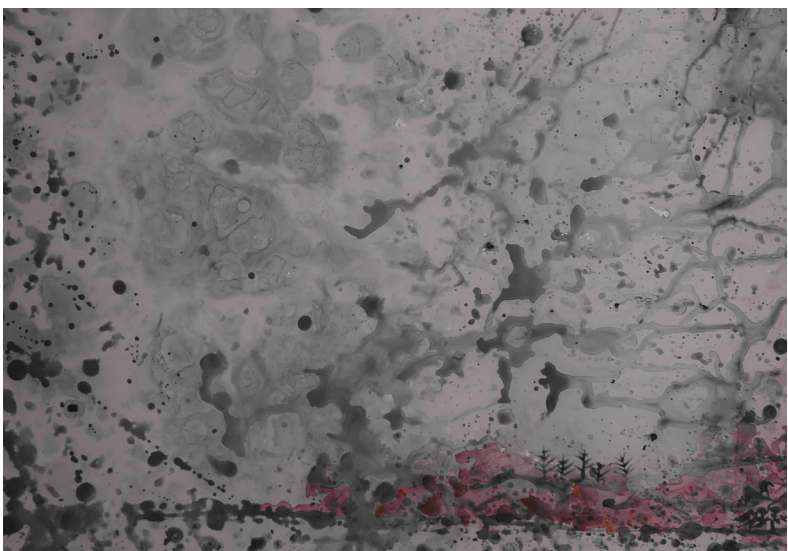
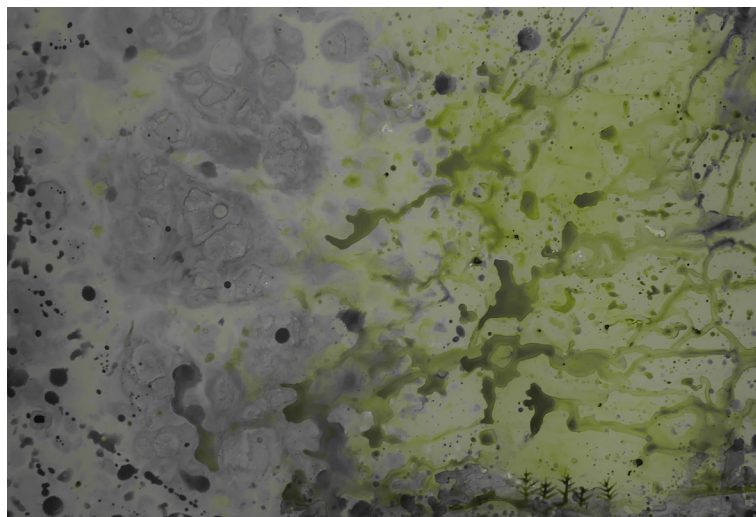
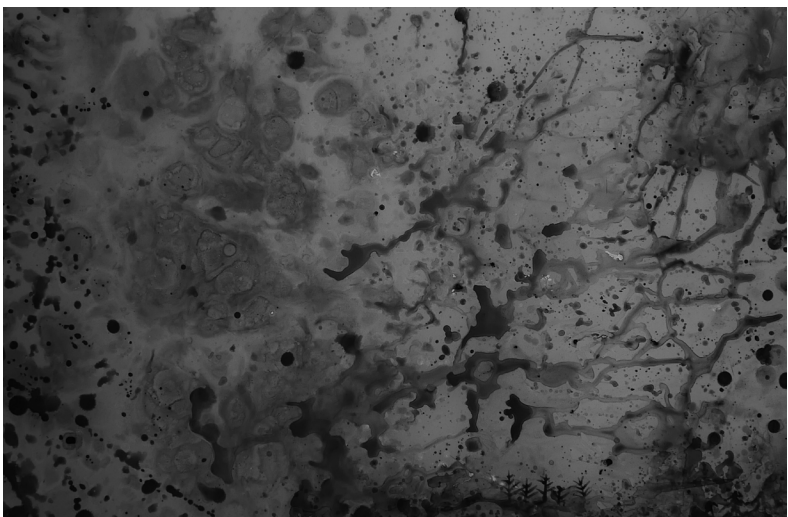




ENGINEERING. HUMAN. CONCRETE. FLOOD



THE WHOLE PROCESS IN A YEAR



Summary of Site Visit

“Everyone should paint, or take photographs, or make films, videos, music, write.”

(Godmer 119)

“ Landscape has long been an arena for artisitc pursuit. Sketched by draughtsmen, sung by poets, depicted by writers, it was an aesthetic touchstone for appropriating outside reality into a personal world view.”

(Rogger 1)

The methods and tools at a designer’s disposal are numerous and the choices made exhibit the designer’s preferences in the design. However, other than the photos, videos, sketches, or drawings that a designer has carried out during site visits, the way a designer actually works and the tools she uses could help strengthen her passion for her job. The importance is that the way she chooses is what she loves to do and is natural for her to use. For myself, I feel happy and relaxed in drawing. This helps me a lot in getting into the thinking process.

The site visit process could give a designer temporary respite from times of frustration, disappointment and pressure. While walking and looking at the Red River Floodway I felt that it brought me fresh air, happy memories, and a short escape from hard work and frustration.

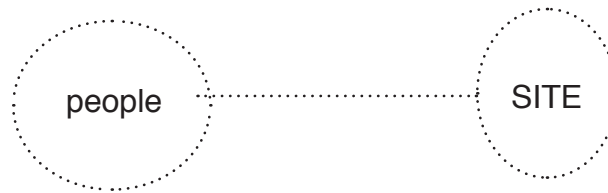
Many of my most valuable thoughts emerged after each site walk and drawing. Drawing became a comforting routine. This strengthens my passion for the surroundings and my appreciation for the design of the Red River Floodway.

Many people come to a job because of the love of the job, but often difficult experiences bring about work stress and make them forget their original passion. By being prescribed rigid methods and tools for a site visit, a designer’s passion may be thwarted.

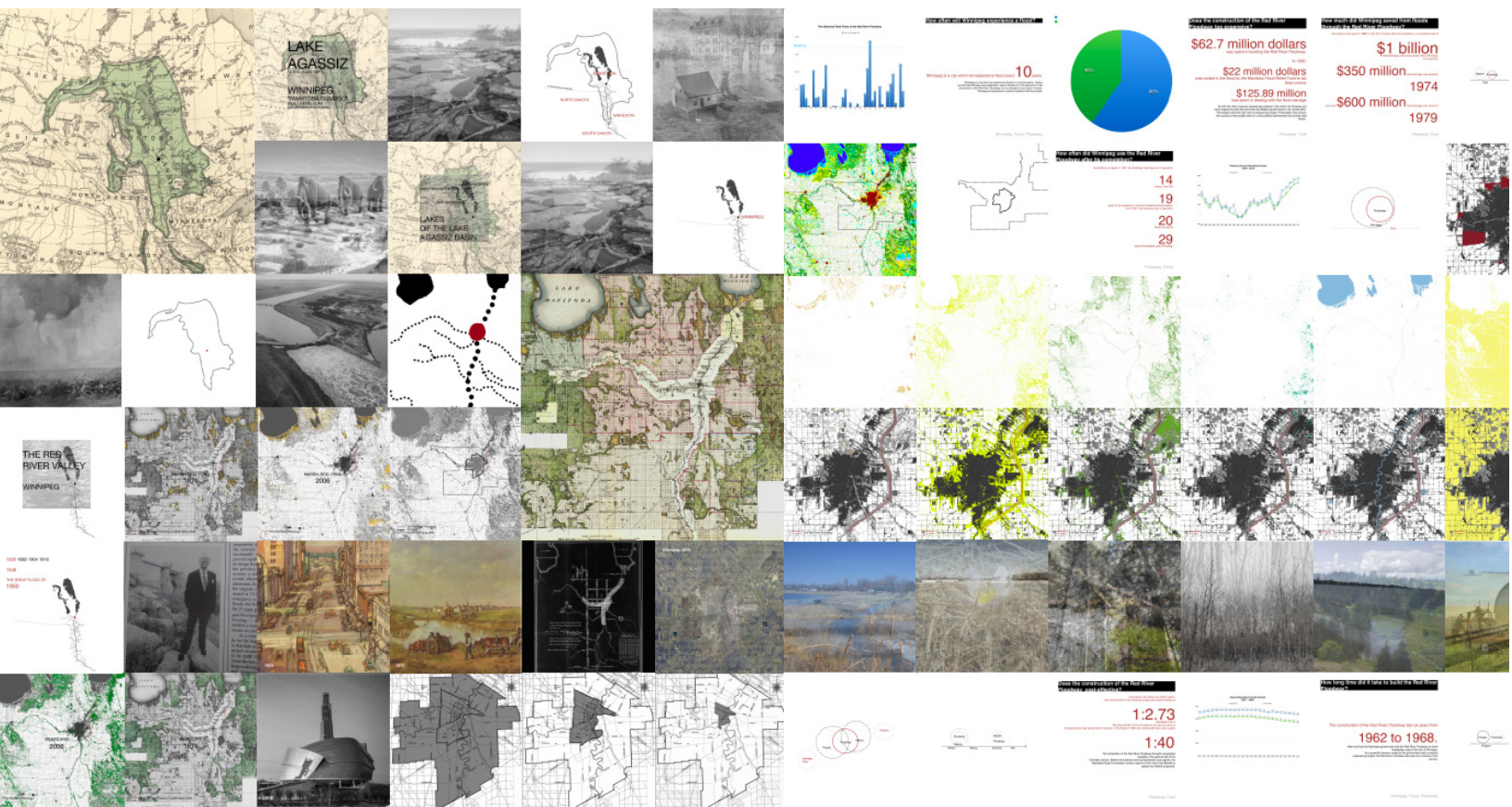
This process must be more than following a formula for beauty or the whims of a hobby. It must also be about a designer’s right to cultivate an exclusive realm of knowledge; designers are not simply drafting people.

Site Research of The Red River Floodway

The communication between people and the site



This process can be reflected on the second act of the four trace concepts by Christophe Girot - **grounding**. According to Girot, grounding is not an individual imagination but a more systematic research looking more deeply into the place.



**A Research Mapping Study and a Data collection
of
The Red River Floodway**

A Research Mapping Study

“Map devices such as frame, scale, orientation, projection, indexing, and naming reveal artificial geographies that remain unavailable to human eyes.”

(Corner 199)

Mapping is one of the most efficient ways to represent the invisibles of the site. To map the past and present of the Red River Floodway helps to represent more invisibles of this place.

What is a Research Mapping Study?

Research mapping investigates the Red River Floodway through “logistic” research. It is an aid to understanding the past and current life of the Red River Floodway as well as its surrounding context. It is a mapping study and is intended to illustrate the life of the landscape with the dimension of time in appropriate scales. Text, photos, collages, drawings and diagrams are included in the research mapping to help achieve a comprehensive description of the Floodway.

To Begin the Mapping: Learn to Love:

**One must practice trying
to understand,
to know
and to love
the land before fighting against the flood.**

What are the characteristics of this land?

Why do floods happen?

What is the soil like?

How does water run?

Where does the water come from?

When were the historical occurrences of floods?

And what was the extent of the floodwaters?

How did people react to and deal with floods and the results of flood devastation?

...

Looking at the Landscape of the Red River Floodway.

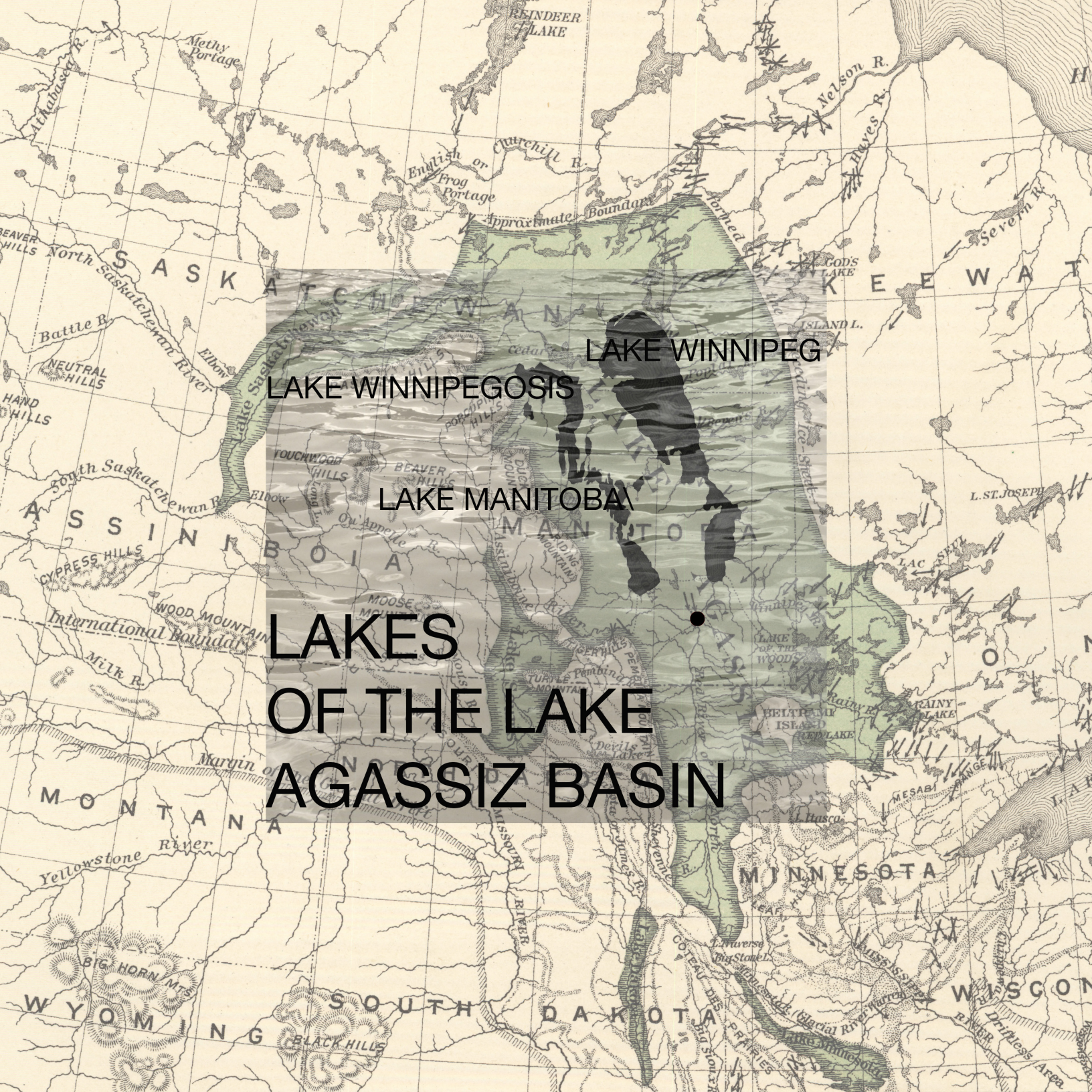
The Red River Floodway is an enormous slash in the landscape cutting into the flatness of the prairie. It is a huge human gesture to survival on the land. The original intention of excavating the Red River Floodway was simple - divide the floodwater.

When a landscape emerges on the land, it may not be simply a solution to a problem - especially a landscape intervention as large as the Red River Floodway. The year 1968 was the beginning of construction and for the past 47 years, the Red River Floodway has been a vital living part of Winnipeg, Manitoba and Canada.

This research mapping is a form of investigating the Red River Floodway's "living environment". It also aims to give the Floodway's historical context. The maps included in this research indicate both its physical conditions and the cultural environment, which may help researchers to see potential opportunities and constraints for the landscape in the future.



The “Manitoba Gumbo” is the glaciolacustrine clay that was deposited on the shore and beds of glacial lakes. It was reported that the current Floodway channel is constructed through a region underlain by some 16’ to 65’ meters of glaciolacustrine clay deposit which are of very low permeability.



LAKE WINNIPEG

LAKE WINNIPEGOSIS

LAKE MANITOBA

•
LAKES
OF THE LAKE
AGASSIZ BASIN



Beside the quality of the soil, the former pleistocene glacial lake also left Manitoba thousands of lakes and many rivers.

A detailed historical map of the Red River Valley and Winnipeg area. The map shows the Red River flowing from the north, through the Red River Valley, and into Lake Winnipeg. The city of Winnipeg is marked with a black dot. The map includes labels for various geographical features such as the Assiniboine River, South Saskatchewan River, and the International Boundary. It also shows the locations of several lakes, including Lake Winnipeg, Lake St. Joseph, and Lake of the Woods. The map is titled "THE RED RIVER VALLEY WINNIPEG" in large, bold, black letters. The map is a historical document, likely from the late 19th or early 20th century, and is oriented with North at the top.

THE RED RIVER VALLEY WINNIPEG



Winnipeg is very flat area in North America, and slopes gradually northwards from North Dakota with a slight descent of only 6 inches per mile in its Manitoba section. Before the Red River Floodway, Winnipeg was drained by the Red River which flows northward in a twisting course to Lake Winnipeg.



Winnipeg is located downstream of the Red River which originates near Wahpeton, North Dakota, and flows northward to Winnipeg. The entire Red River covers an extensive area of over 48,000 square miles in the United States.



FLOODS

IN A CYCLICAL PATTERN





Some people have questioned whether Winnipeg was built in the right place since it has experienced so many floods in the last century (Booy).

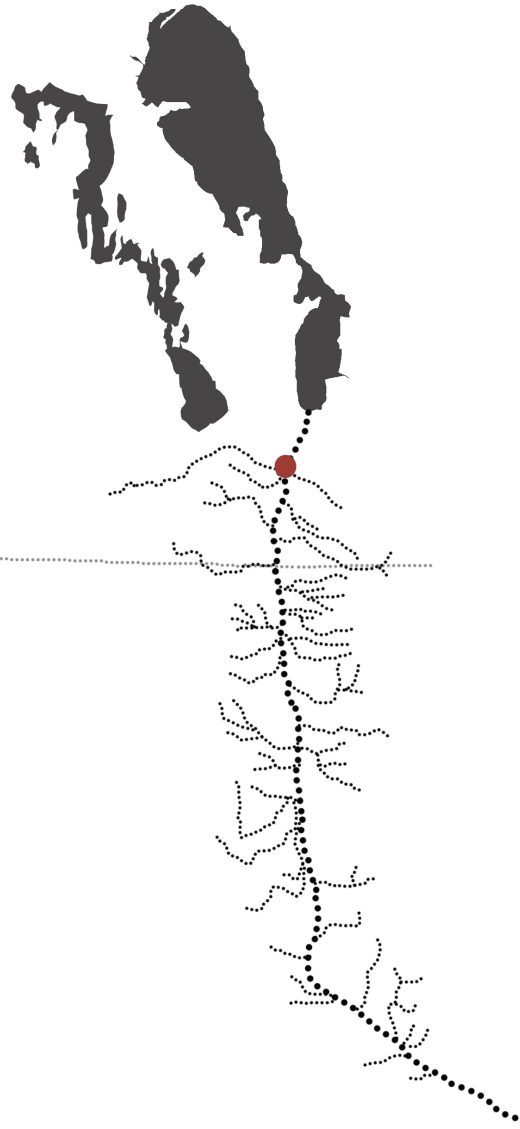
However, this land brings people more than just disasters - a bonding of the spirit of Manitobans was established during those disasters.

1826 1882 1904 1916

1948

THE GREAT FLOOD OF 1950

“The history of Manitoba has many milestones - the arrival of La Verendrye, the Selkirk Settlers, the Riel Rebellion, the Manitoba Schools Question, the Winnipeg Strike, and so on ... but only one natural, elemental event is a defining moment in the shaping of the province - the great Flood of 1950. Nothing has etched itself into our identity as much as that year when the water would not stop rising.” (Duff Roblin)

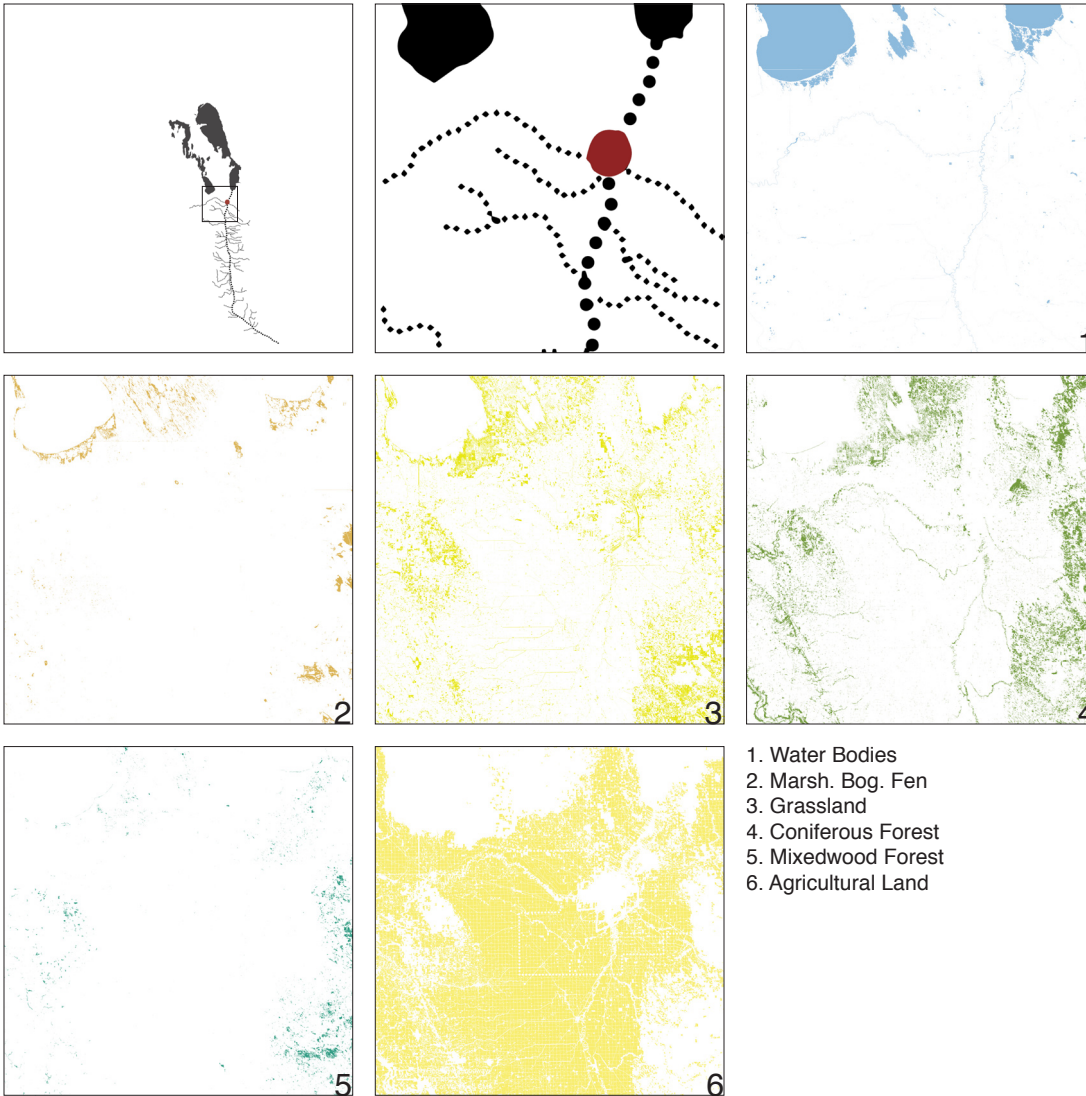


Besides Floods, Manitoban Recieves More

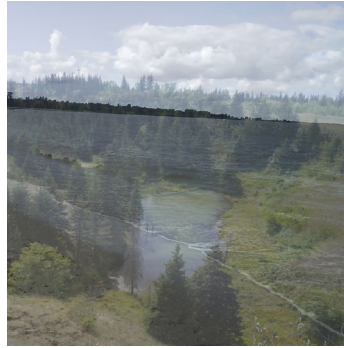
First, Manitobans developed strong spirits in the floods, which gave the land unforgettable memory. In looking at the history of the land, floods were more than simply natural disasters to Manitobans. They helped Manitobans to form a culture in fighting the floods. In Chinese, an idiom states:“ much distress regenerated a nation.” In Manitoba, the Flood of 1950 brought Manitobans together.

Second, Manitobans enjoy abundant natural resources on this land. Aboriginal nations lived on this land for centuries before Europeans began trading fur with them in the 15th century. Permanent cities and towns have been built on the land since then. While the location of Winnipeg has often been affected by floods, ancient peoples chose to settle down on these lands for good reasons.

Winnipeg is a city close to abundant natural resources. The eastern, southeastern, and northern reaches of the province range through marshes, fens, bogs, prairie, rangeland, coniferous forests, deciduous forests, fresh water bodies, and farmlands. All these natural resources are so important to both people and wildlife who live on this land. These resources are also the soul and spirit of this land which is formed and changes with time.



Different Natural Resources in Manitoba



Introduction of the CMA (Census Metropolitan Area)

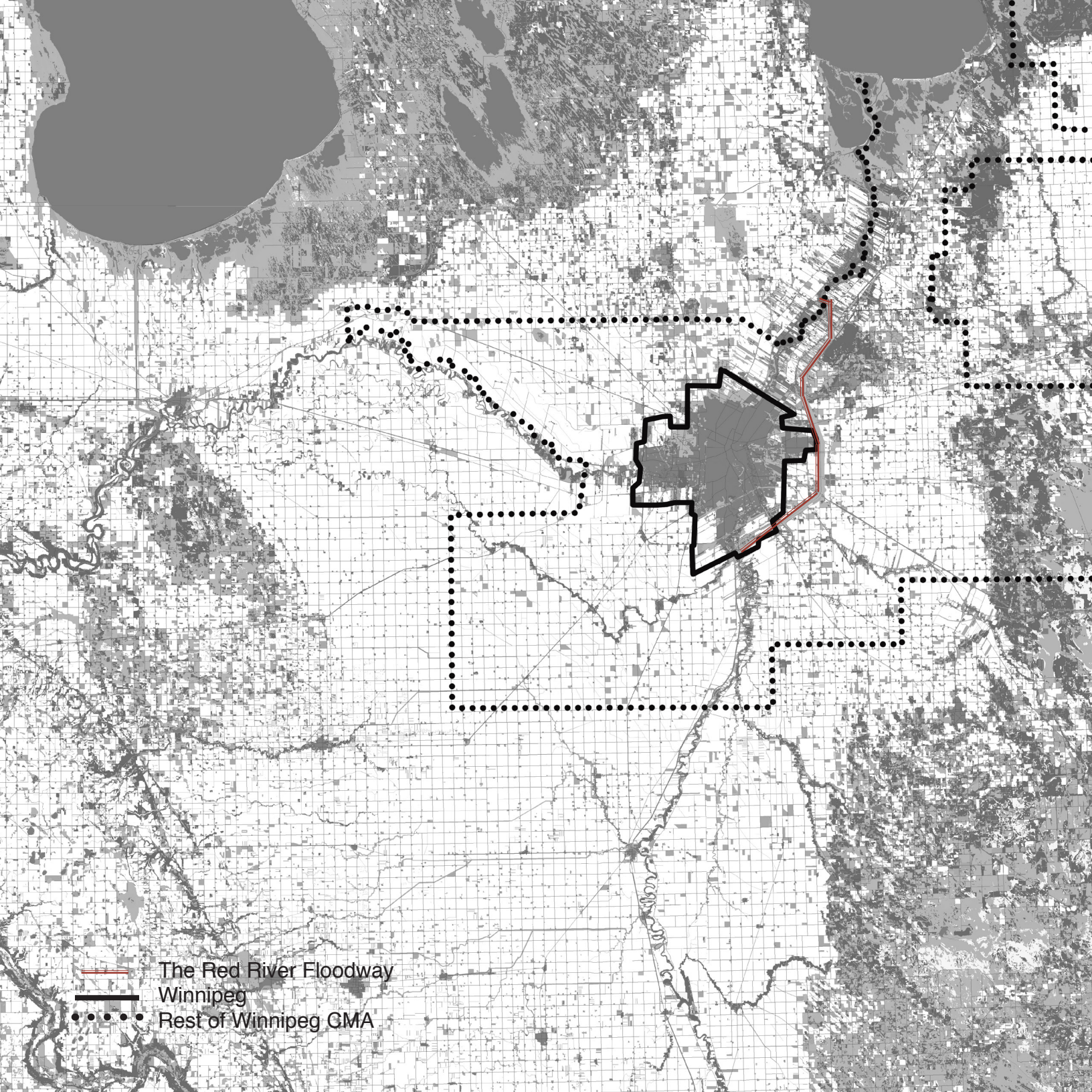
Since Winnipeg CMA is important in looking at the city in a larger scale and in the future, before talking about the natural resources of Manitoba and Winnipeg, a map of the Winnipeg, Winnipeg CMA and the Red River Floodway should be shown first. The map on page 115 shows the edge of the Winnipeg CMA, the edge of Winnipeg, and trace of the entire Red River Floodway.

What is the Winnipeg CMA?

If 50% or more of the labour force of a neighbouring municipality works in the core city, then the municipality is included in the core city's CMA. The map shows the municipalities that are part of the Winnipeg CMA. According to the map, the Winnipeg CMA includes the City of Winnipeg and the rural municipalities of Richot, Tache, Springfield, East St. Paul, West St. Paul, Rosser, St. Francois Xavier, Headingley, St. Clements, MacDonald and the Brokenhead First Nation (The City of Winnipeg).

The Red River Floodway and the Winnipeg CMA

Although the Red River Floodway is not completely within the boundaries of the City of Winnipeg, as it extends to the edges of the city, it is entirely within the boundaries of the Winnipeg CMA. As the city develops and regenerates in the future, the Red River Floodway must play a significant role and cannot be neglected.



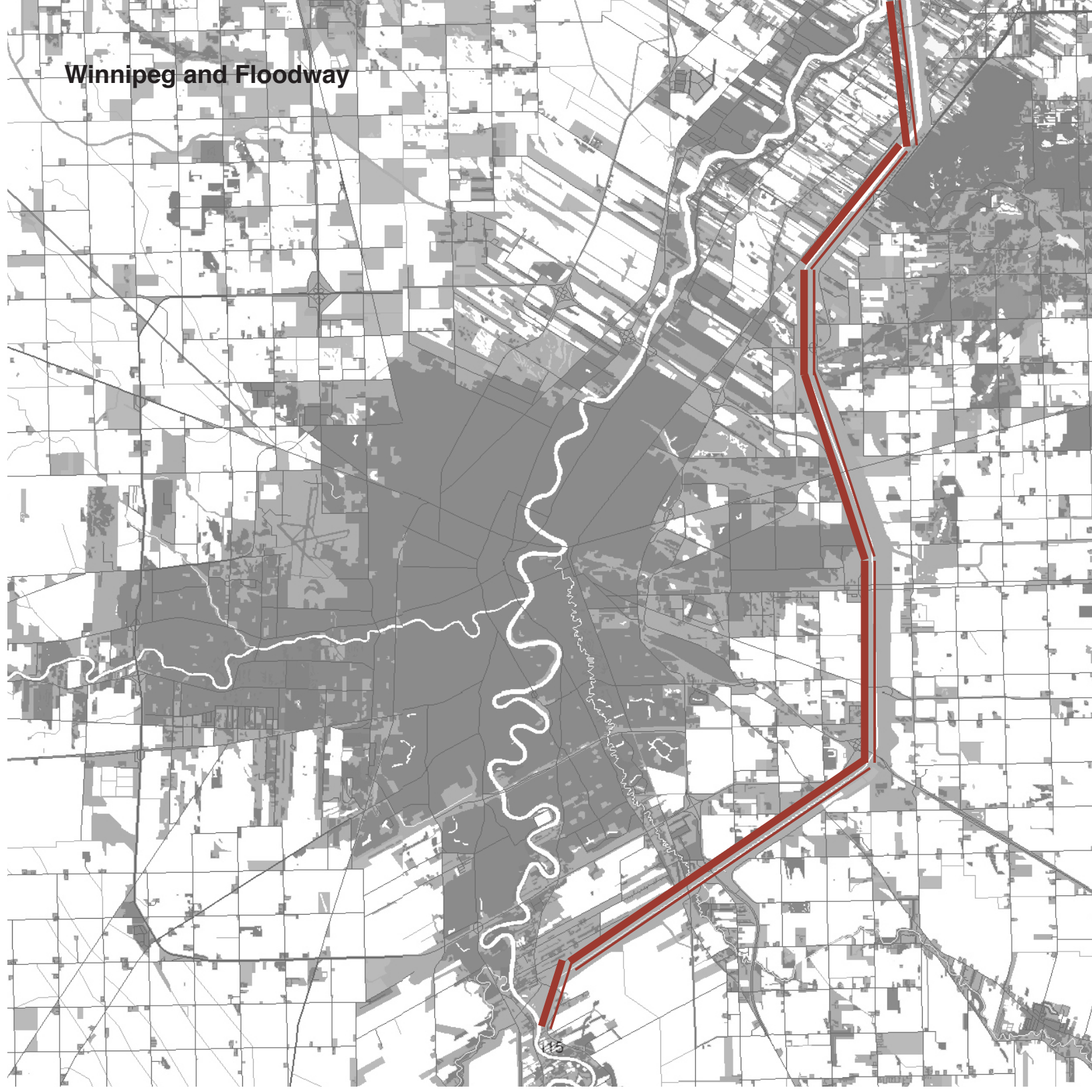
-  The Red River Floodway
-  Winnipeg
-  Rest of Winnipeg GMA

Take a Close Look at Winnipeg and Floodway

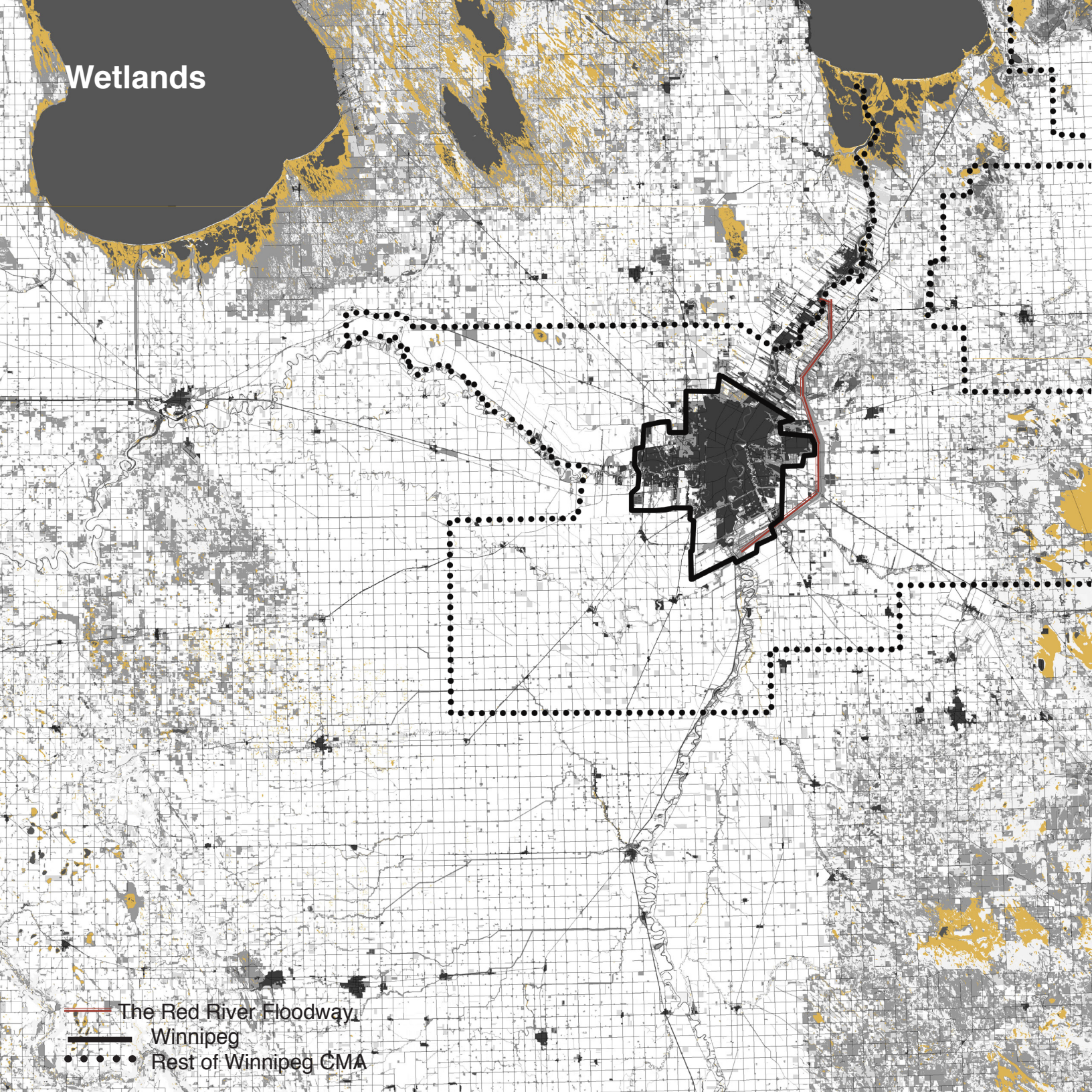
In looking closer at the Red River Floodway and the City of Winnipeg, currently, what are the relationships between the city and those natural resources such as water, prairie, cropland, and forests?

On the other hand, what are the relationships with the Red River Floodway and humans in relation to city sprawl, history memories, and better living in the future?

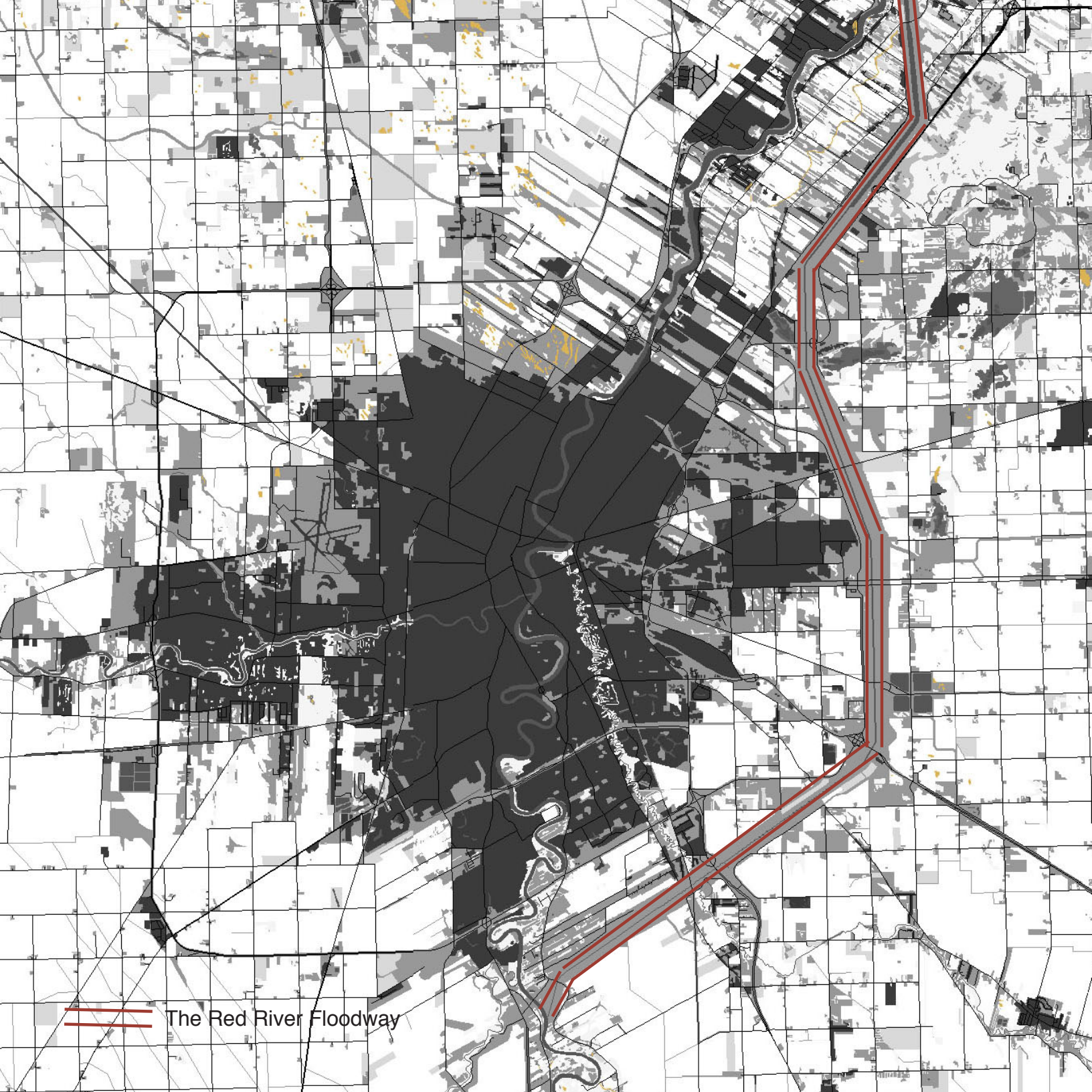
Winnipeg and Floodway



Wetlands



- The Red River Floodway
- Winnipeg
- Rest of Winnipeg CMA



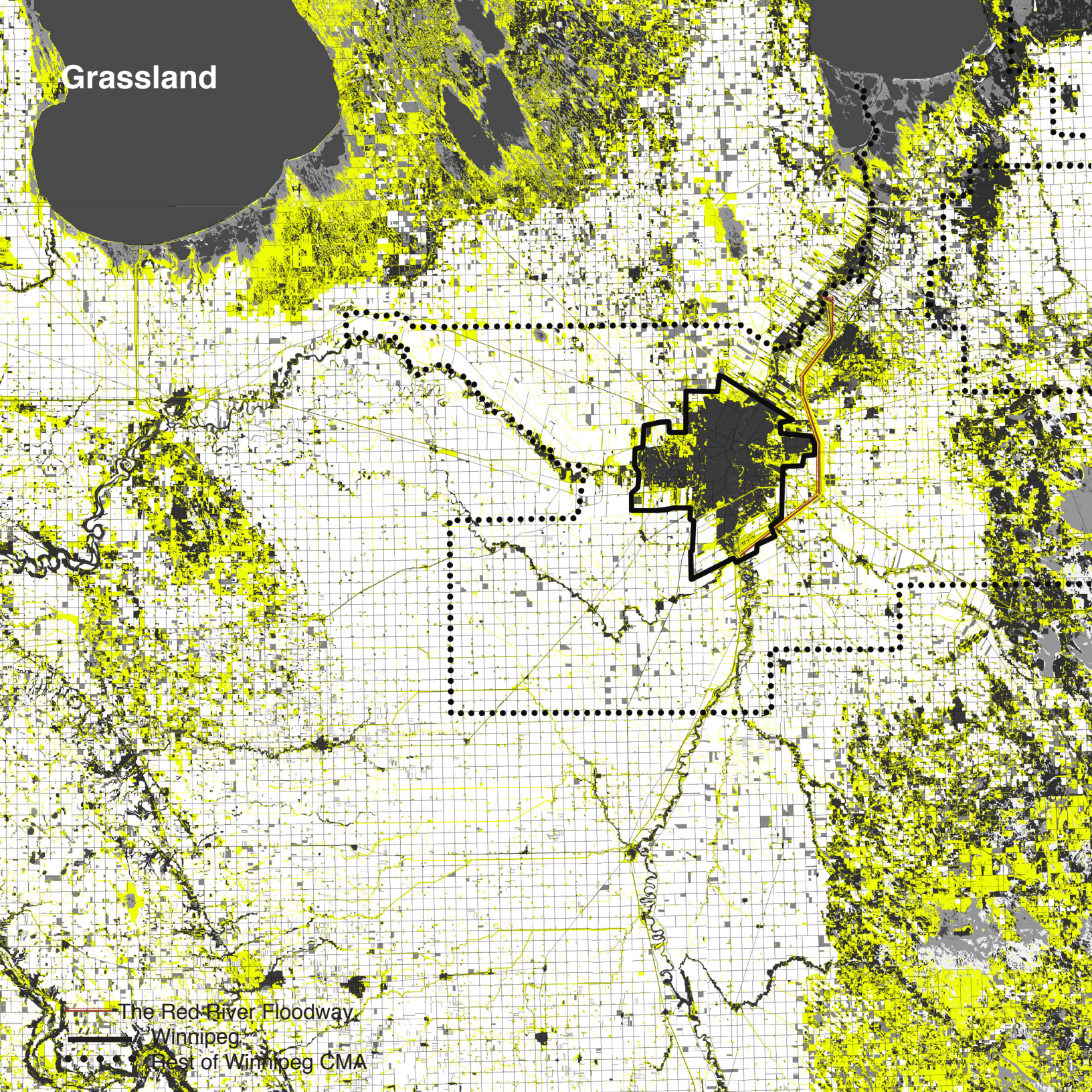
The Red River Floodway



Marsh. Bog. Fen.

Marshs, bogs and fens are all defined as wetlands in Manitoba. According to the Province of Manitoba, wetlands are comprised of various herbaceous species. Wetlands range from intermittent inundated (temporary, seasonal, semi-permanent) to permanent depending on the current annual precipitation. Manitoba and Winnipeg have many wetlands. However, there are no marshs, bogs or fens in or nearby the Red River Floodway.

Grassland



The Red River Floodway

Winnipeg

Rest of Winnipeg CMA



The Red River Floodway



Grassland

According to the province of Manitoba, grassland is defined as lands of mixed native and prairie grasses and herbaceous vegetation. In addition, it may be used for the harvesting of hay while others may be grazed.

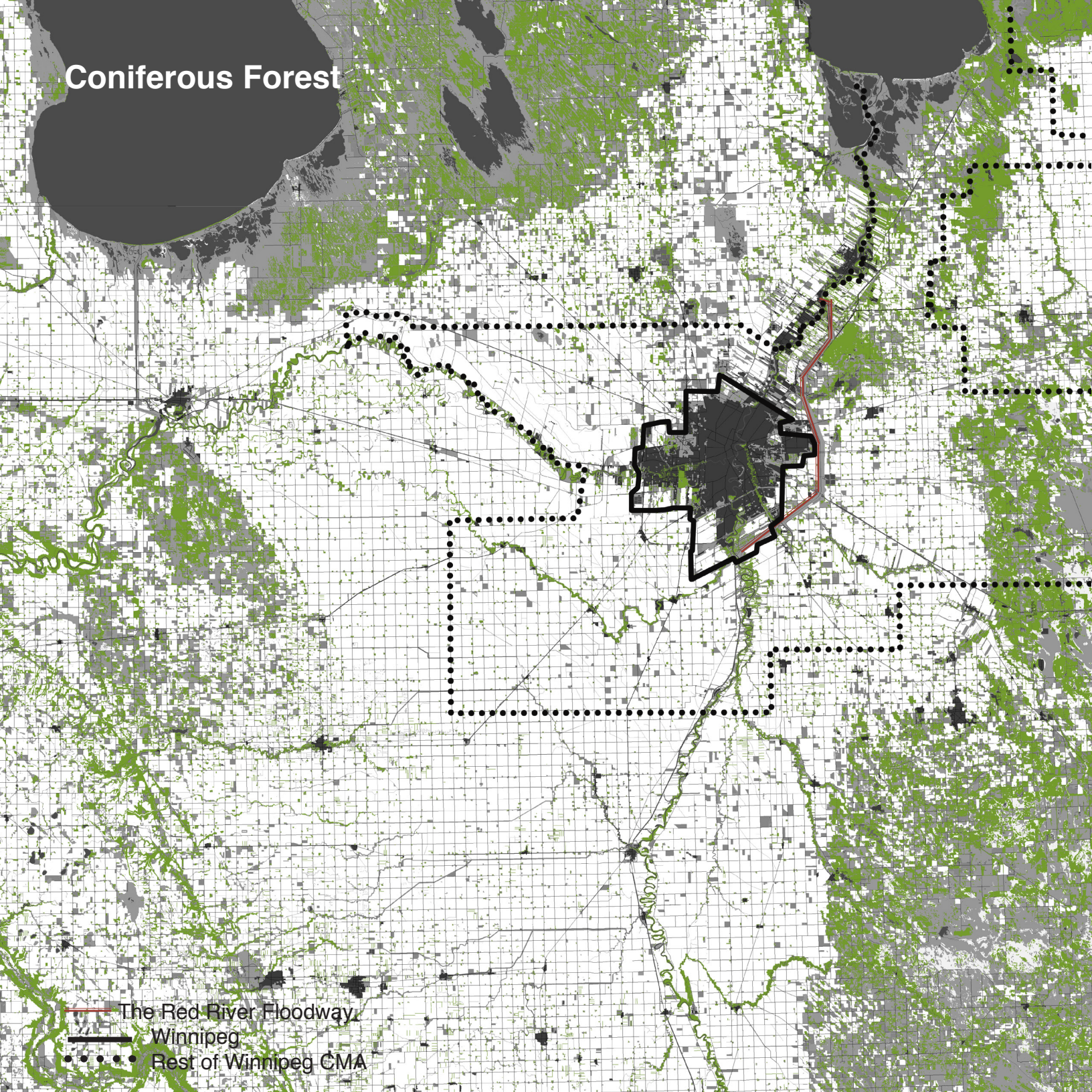
The whole Red River Floodway is seen as grassland. This has many positive effects on the ecological environment of Winnipeg because the channel is a part of the grassland in Winnipeg and it is connected to the other grasslands in Manitoba. The vegetation species in the channel are almost the same as those defined in the large scale map of Manitoba.

According to the Opportunity Concept Report (Manitob Floodway Authority, 2009), there are willow aster, reed canary grass, sandbar willow, cord grass, and quack grass in the channel. All the species are adapted to intermittent flooding. Most of the vegetation is in the bottom of the channel because the Floodway expansion project disturbed some of the vegetation in the upper part of the channel.

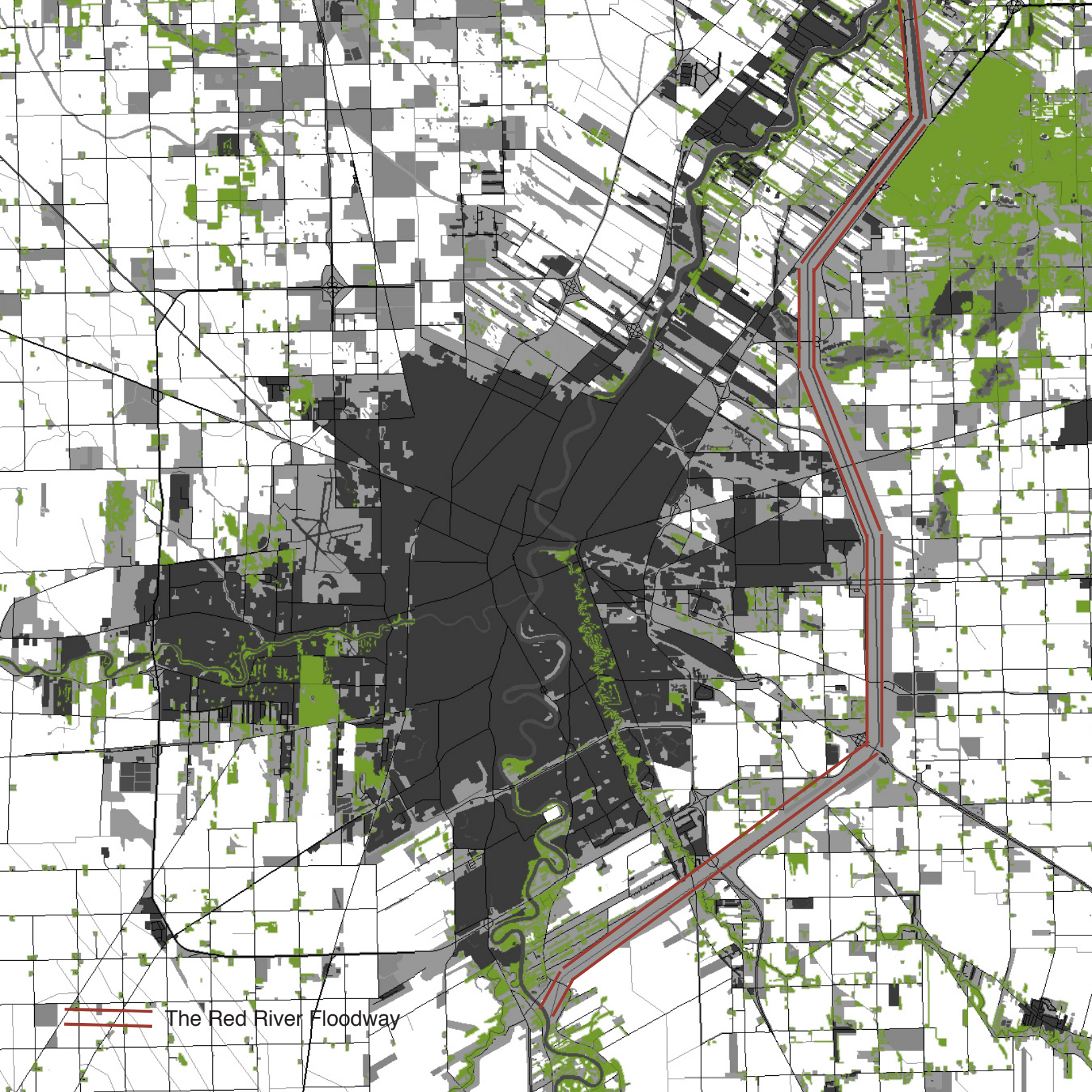
These grasses play a big role in the erosion control in the channel. Thus many areas in the channel were reseeded in the Floodway expansion project. Different bed materials and vegetative species offer different abilities to withstand stresses along the Floodway channel.

In addition, some of the forage specialists (2009) indicate that the primary cover of the Floodway embankments since construction has been forage. It is good land for hay production. This vegetation cover is also suitable for cattle grazing.

Coniferous Forest



— The Red River Floodway
— Winnipeg
..... Rest of Winnipeg CMA



The Red River Floodway



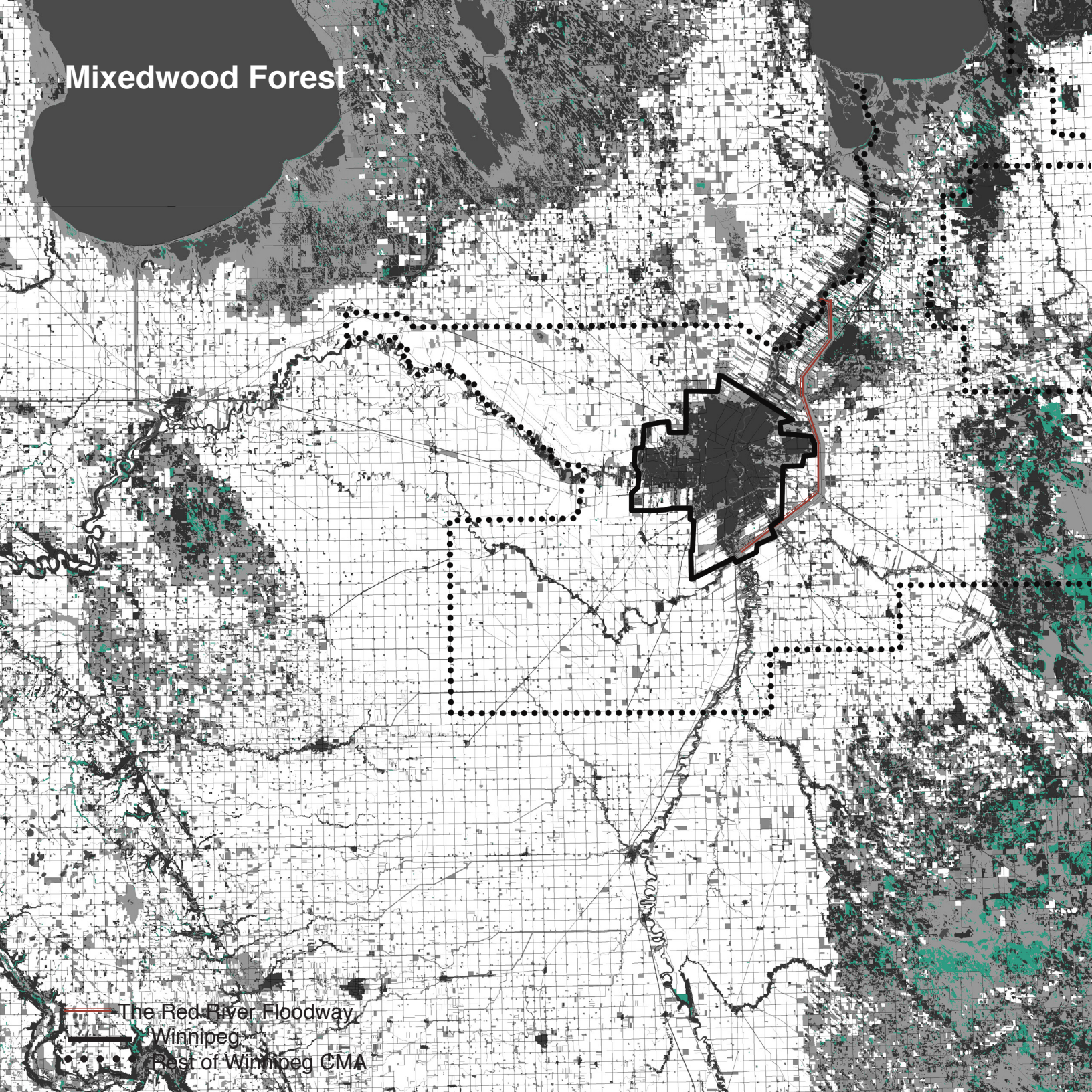
Coniferous Forest

According to the Province of Manitoba, the coniferous forest lands is the area where 75 - 100% of the tree canopy are coniferous. The main species in the coniferous forest are Jack Pine, White Spruce and Black Spruce.

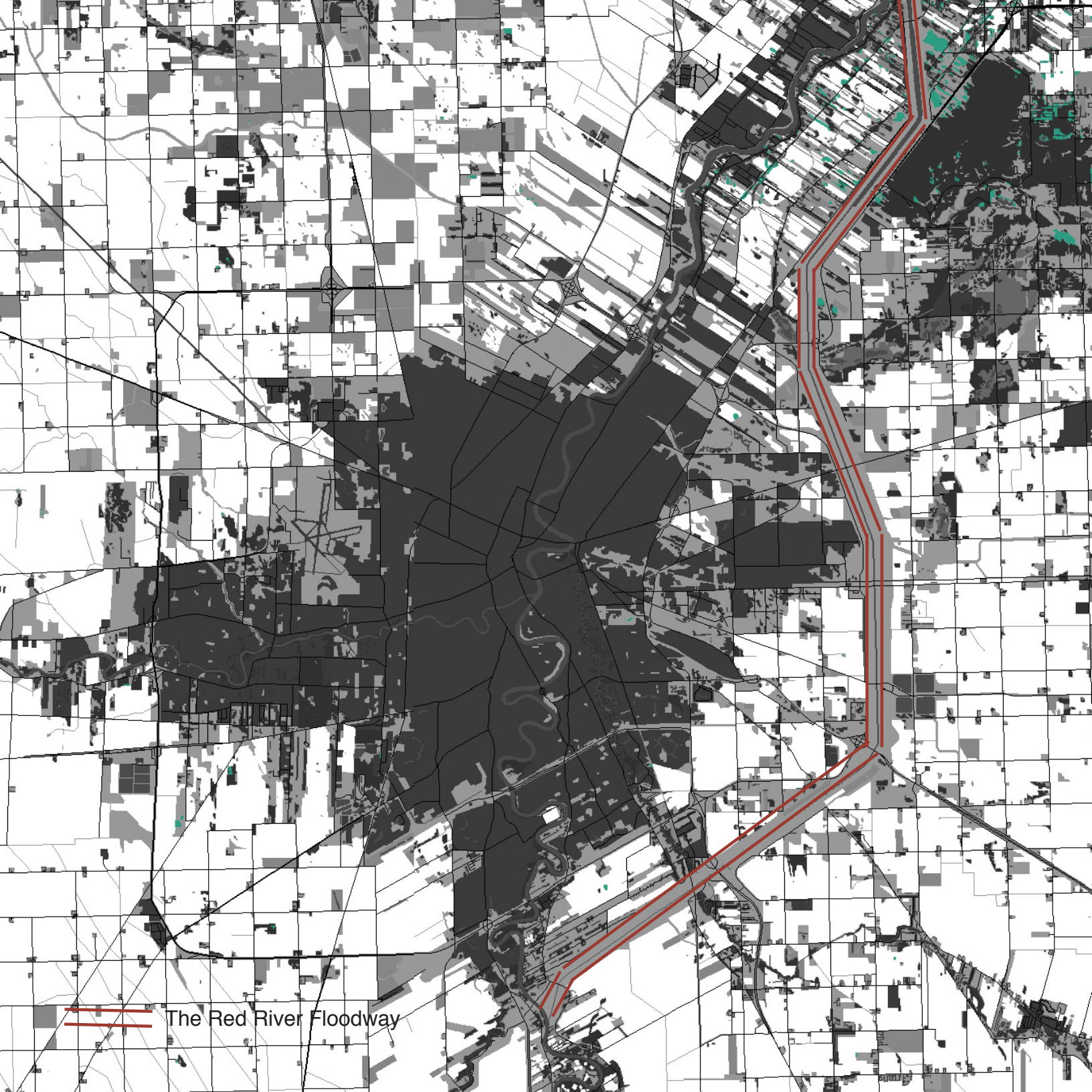
In the 21st century, it seems to be luxurious to talk about forest in the city. Compared to other large cities globally, Winnipeg has a relatively large forest area in the city. There are however, more opportunities to increase this.

Currently, the Red River Floodway has some connection to the coniferous forest in the north, and some connections to the coniferous forest to the south of the Seine River. To look at the northeast corner of the map, the Red River Floodway performs as an edge of the coniferous forest.

Mixedwood Forest



— The Red River Floodway
— Winnipeg
••••• Rest of Winnipeg CMA



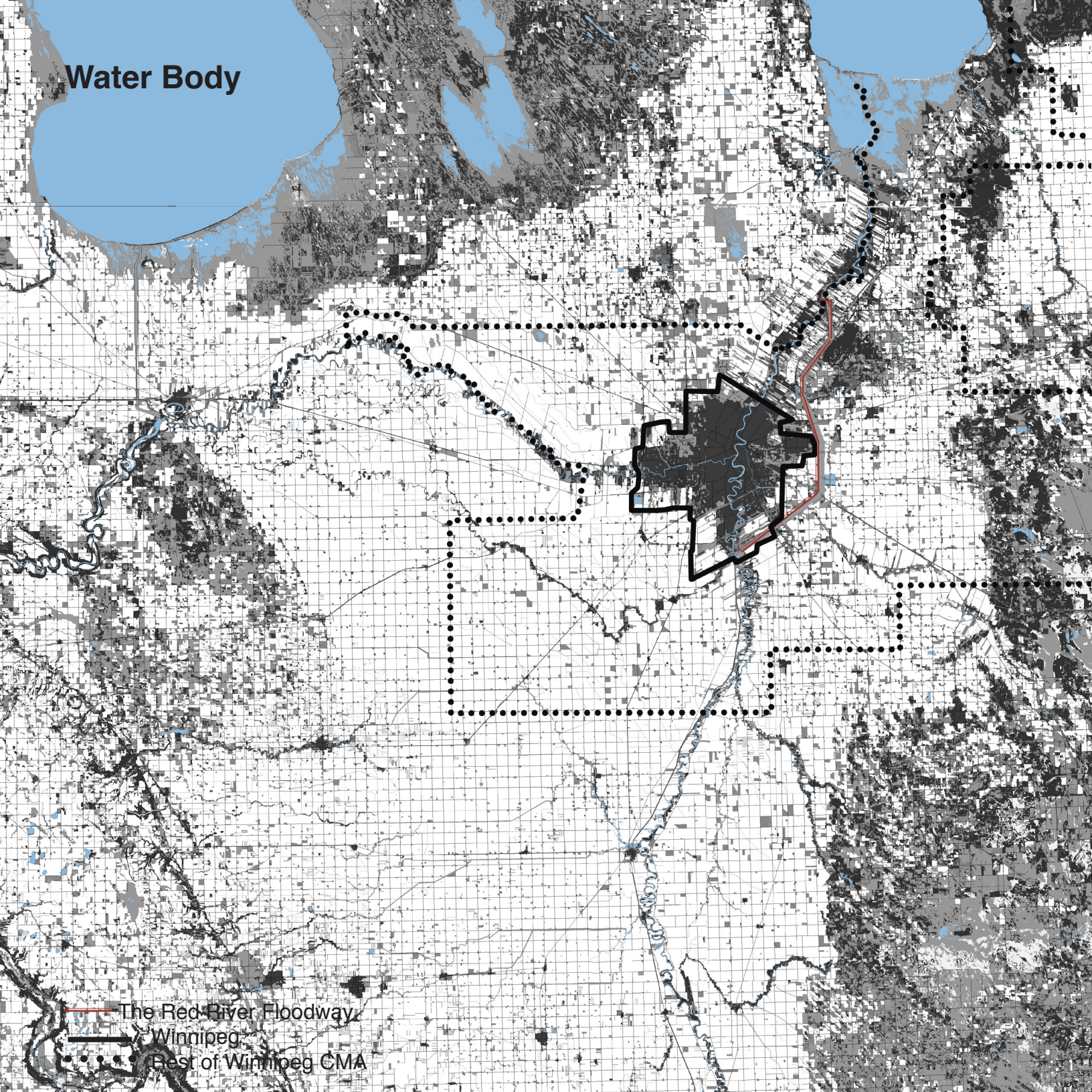
The Red River Floodway



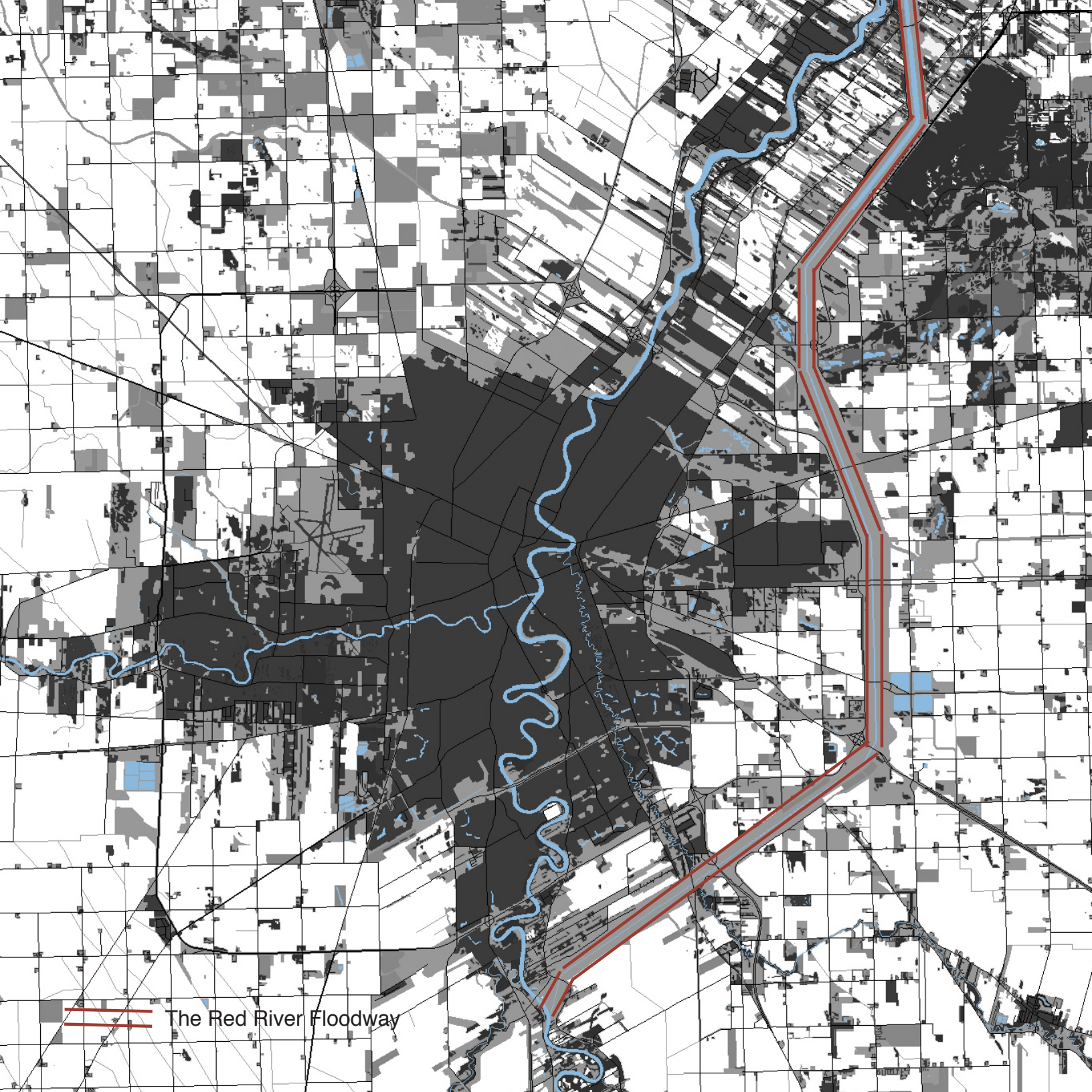
Mixedwood Forest

The mixedwood forest is the kind of forest, which encompasses treed bogs and marshes. This is currently rare in Winnipeg. According to the map, there is some mixedwood forest in the north part of the Red River Floodway in the Birds Hill Provincial Park.

Water Body



— The Red River Floodway
— Winnipeg
... Best of Winnipeg CMA



 The Red River Floodway



Water Bodies

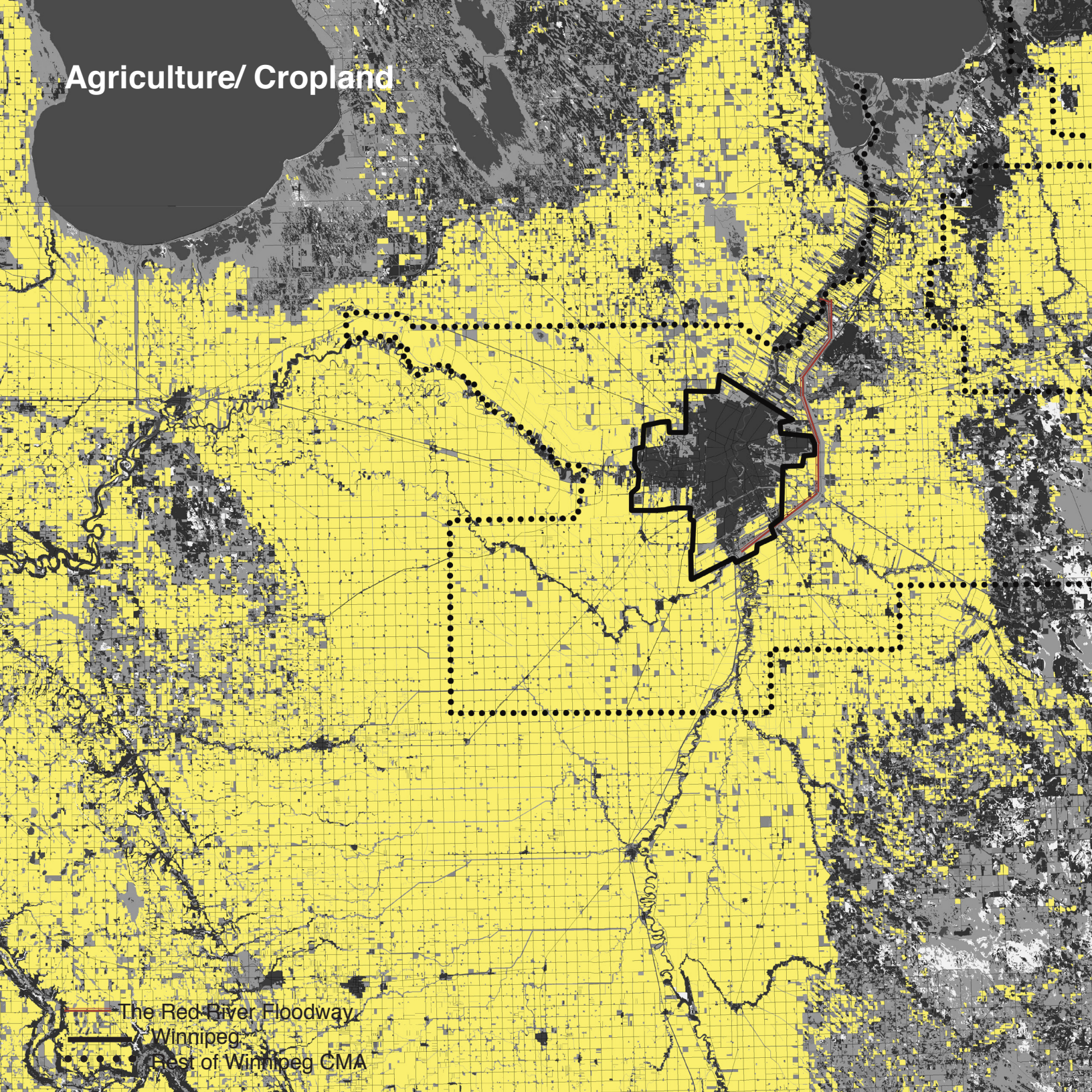
Water bodies consist of all open water - lakes, rivers, streams, ponds, lagoons (The Province of Manitoba).

In looking at the map, Winnipeg is a city with rivers, streams and marshes. Winnipeg should not be a city with potable water shortage problems. In addition, Winnipeg experiences an extreme climate change every year which transforms the land between dryland and floodland.

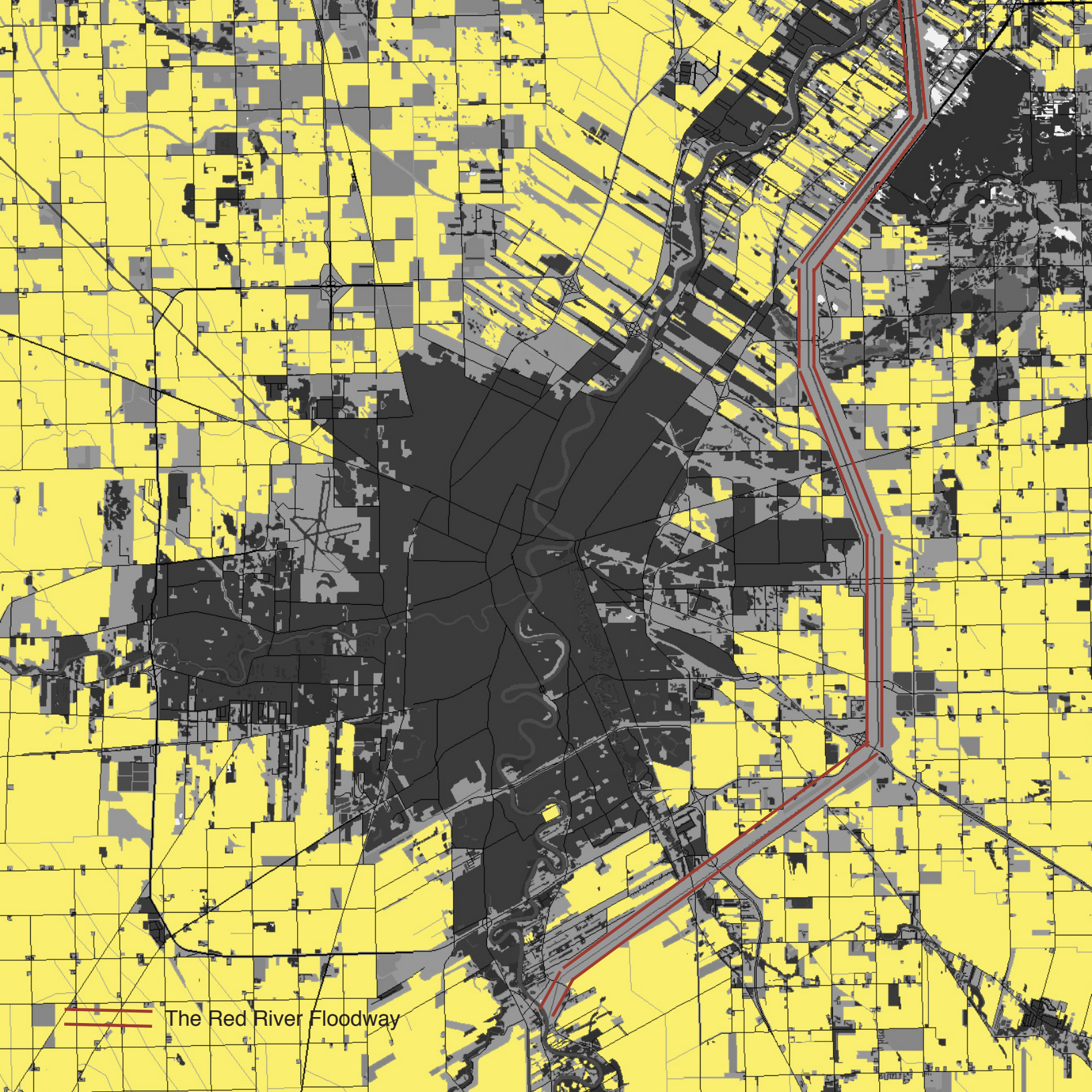
The Red River Floodway emerges because of the global warming in the last century and the city has not been built with the function to absorb or retain water on the land as would have happened before the city was built. The Red River tends to flood every spring and hence the Floodway is used but then it becomes dry or almost dry in the summer. In addition, the Red River Floodway is isolated from groundwater which is defined as unrecoverable water. Fortunately, it does drain some of the snow - melt water and rainfall at the end of winter and the middle of summer. This gives wild plants and grasses excellent conditions for survival .

In addition, the map does not show the aquifer condition. According to a report in 2005 by the Manitoba Clean Environment Commission, the Floodway channel is in a region which contains two aquifers. This condition is the main consideration in the Floodway expansion project. These aquifers are groundwater flowing from east to west to the Red River which supplies fresh water to local communities but Winnipeg gets its water from Shoal Lake in Ontario.

Agriculture/ Cropland



- The Red River Floodway
- Winnipeg
- Best of Winnipeg CMA



The Red River Floodway



Agriculture/ Cropland

According to the City of Winnipeg, agriculture lands are dedicated to the production of annual cereal, seed and specialty crops. These lands would normally be cultivated on an annual basis.

Most of the land beside the Red River Floodway is agricultural land. Farmers also use the channel of the Red River Floodway seasonally for forage. Before the excavation of the Red River Floodway, the land was used as agriculture land. In addition, the farmers who live beside the Red River Floodway sacrifice a lot. According to a farmer living beside the Red River Floodway: “we already sacrifice our land, crops, peace of mind, business, income, time and attention, money and even access to our homes during emergency spring operations.” (Manitoba Clean Environment Commission, *Report on Public Hearing: Red River Floodway Expansion*)

Manitoba Has Changed A Lot with Time

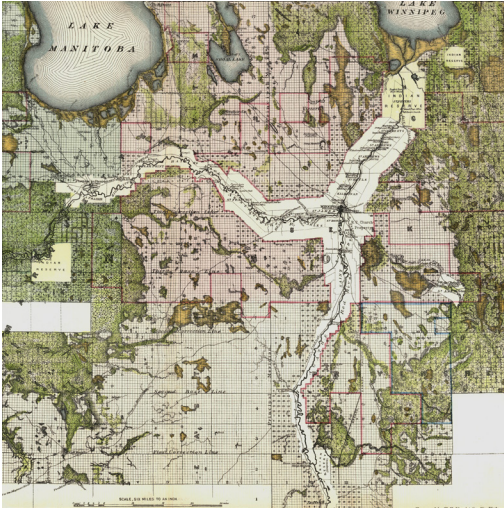
According the maps of the Winnipeg CMA, the City of Winnipeg shares many natural resources with the Winnipeg CMA including forestry, marshes, and prairies.

These natural resources contributes to the uniqueness of Manitoba and give a unique history and culture to this land.

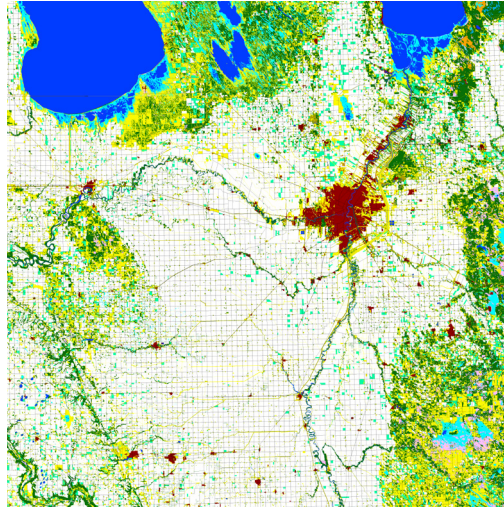
Manitobans survive on the land through the benefits of natural resources. From the 17th century to the 21st century, cities, towns, villages and communities were built on the land and the civilization and the history of Western civilization started with the fur trade between Europeans and the Aboriginal Nations.

However, the land was gradually changed through time. From the prosperity of manufacturing, to the booming of the industrial age, expectations and viewpoints of the land pushed it forward to change.

The Relationship Changed Between Nature and People in Manitoba



1871



2006

From 1871 to 2006, the relationship between nature and people has changed a lot. Similar to many other cities and countries in the world, people disturb nature for city development. Natural resources no longer keep their original status on the land.



1875



1933



2015

According to two drawings from the Manitoba Archives, from 1875 to 1933, the City of Winnipeg has changed rapidly. Carts to transport goods were no longer evident on the land and street cars were built in downtown Winnipeg. Larger buildings were constructed in the 20th and 21st centuries. Winnipeg is coming to its modern age, and is planned to be an international metropolis attracting more immigrants.

LAKE
MANITOBAH

LAKE
WINNIPEG

*Rough Diagram, Based on Hinds Map, intended
to illustrate Report on Townships Surveys & Red
River Territory.*

Ottawa, Feb^y 12 1870

(signed) *L. S. D.*

*Note: It will be seen that the Townships number
North from the 49th Parallel and lie in ranges
East and West of the Winnipeg Meridian.*

(signed) *J. S. D.*

Scale of 6 Miles to the Inch.

SKETCH OF TOWNSHIPS
SHOWING NUMBERING OF SECTIONS.

57	58	59	60	61	62	63	64
56	55	64	53	52	51	50	49
41	42	43	44	45	46	47	48
40	39	38	37	36	35	34	33
25	26	27	28	29	30	31	32
24	23	22	21	20	19	18	17
9	10	11	12	13	14	15	16
8	7	6	5	4	3	2	1

Memo.

*Sections contain 360 Acres each
with five per cent additional
thrown in for Roads.*

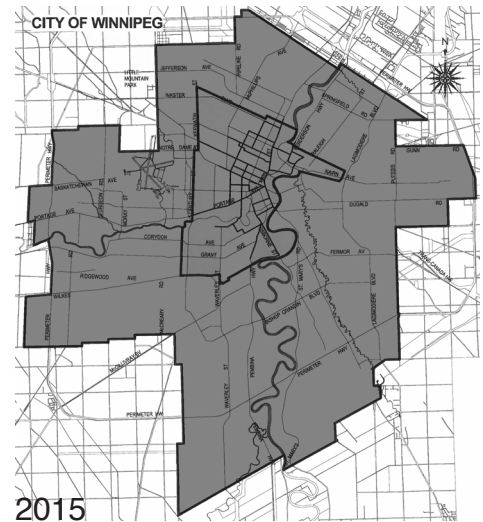
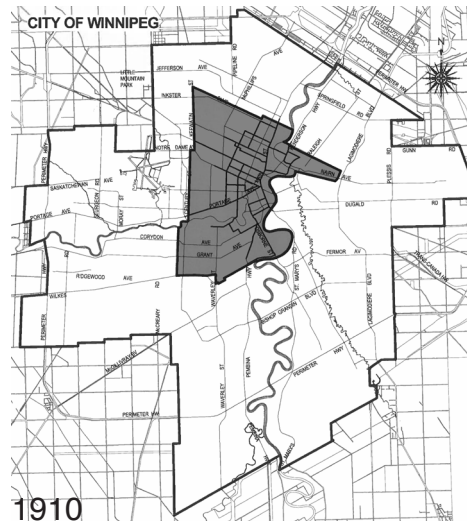
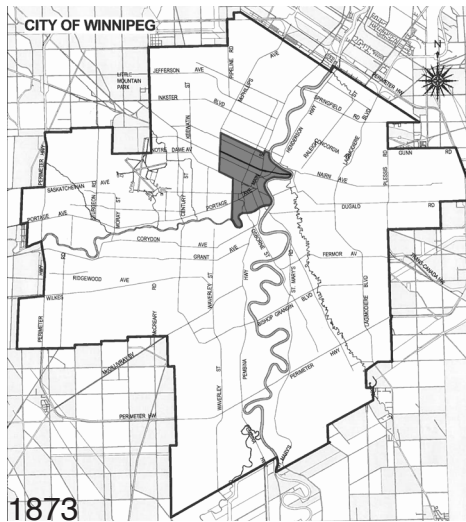
(signed) *J. S. D.*

Map of Winnipeg in 1870

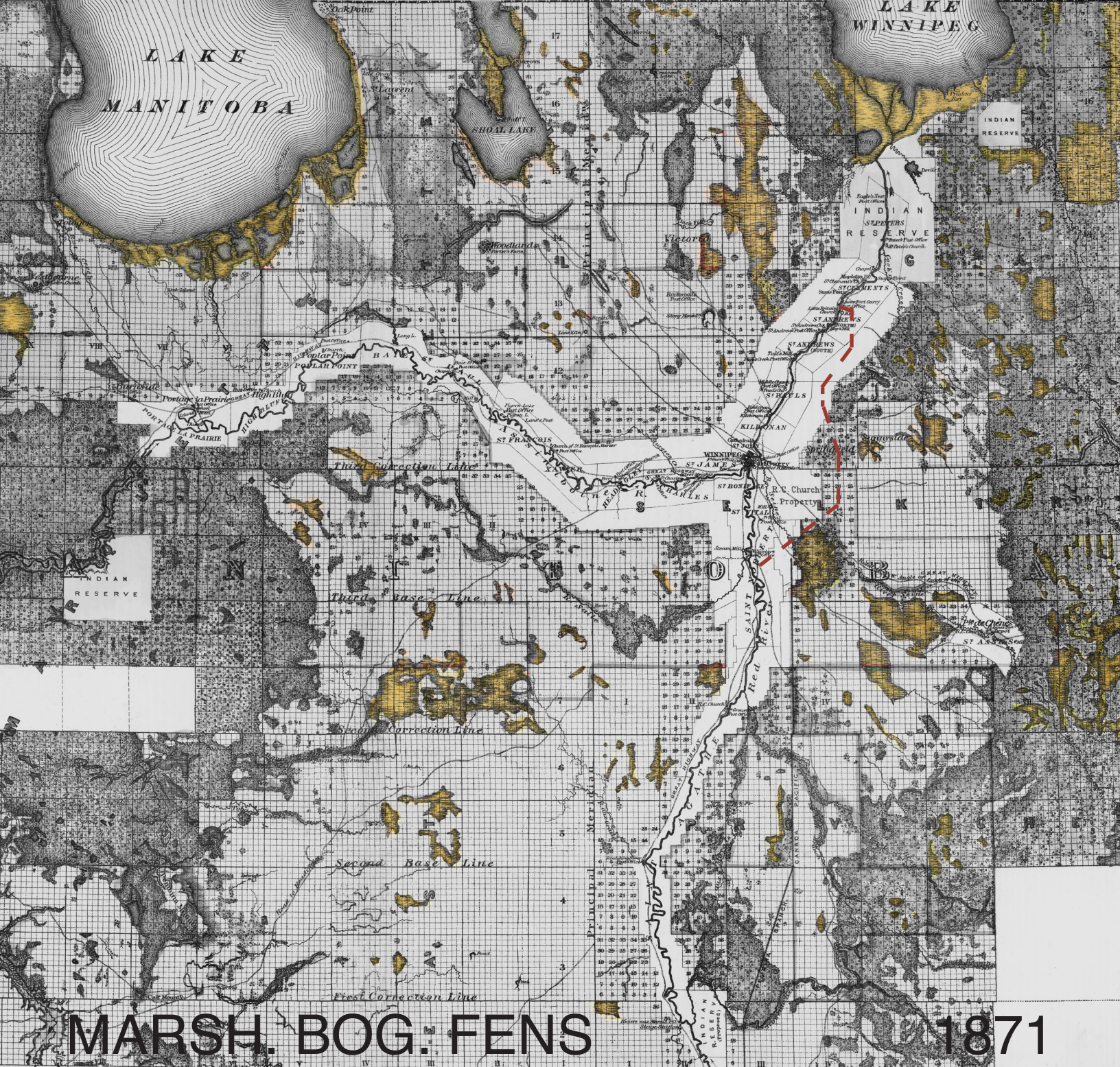


Bureau of Land Office

Winnipeg Has Developed and Spread since 19th Century



From 1873 to 2015, the City of Winnipeg has radically spread and developed, according to the 1871 census of Manitoba and 2011 census of Winnipeg. In 1871, the population of Manitoba was 25,228, and in 2011 the population of Manitoba was 1,208,268. As the capital city in Manitoba, the population of Winnipeg was 663,617 in 2011.

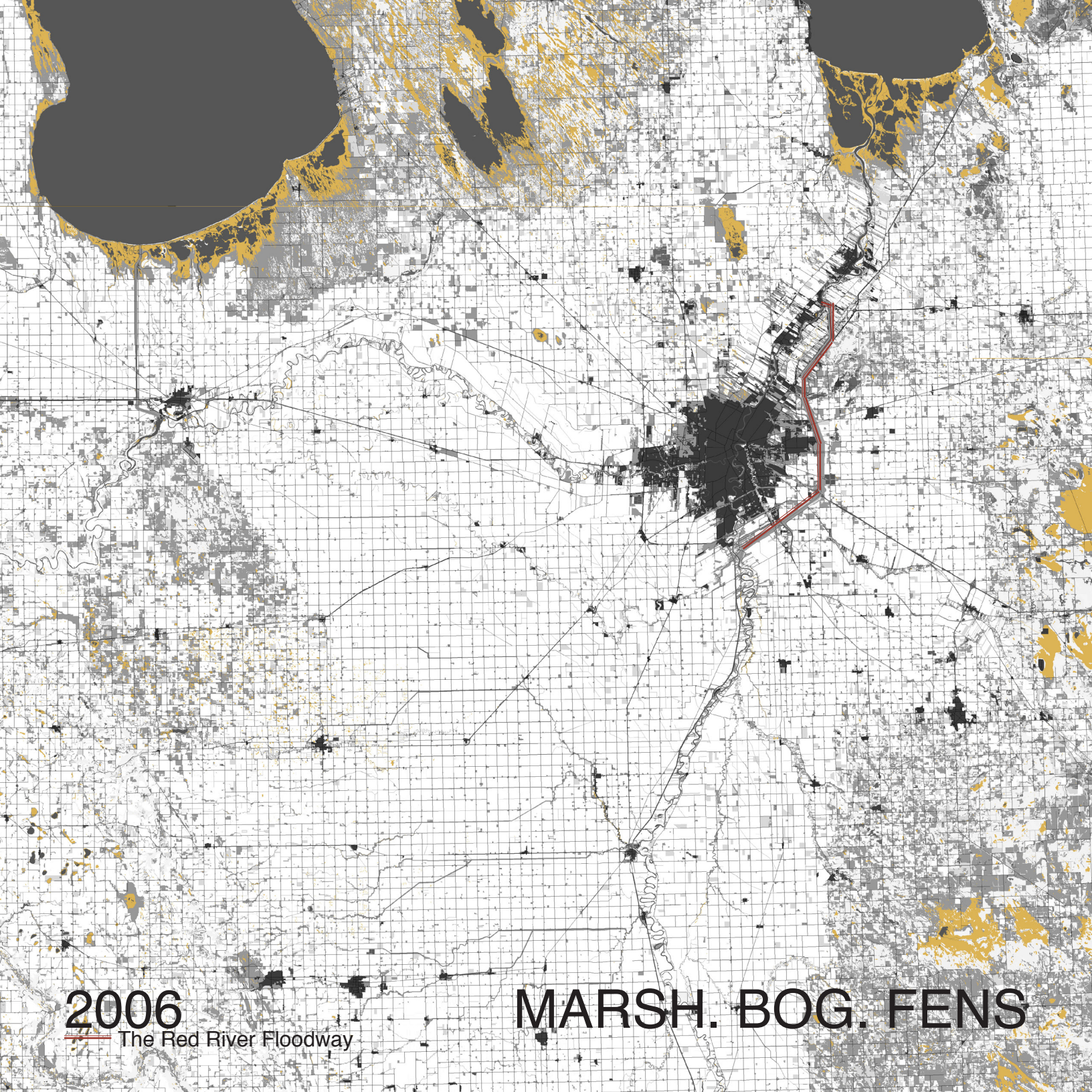


MARSH BOG FENS

1871

The Red River Floodway Location Before Built

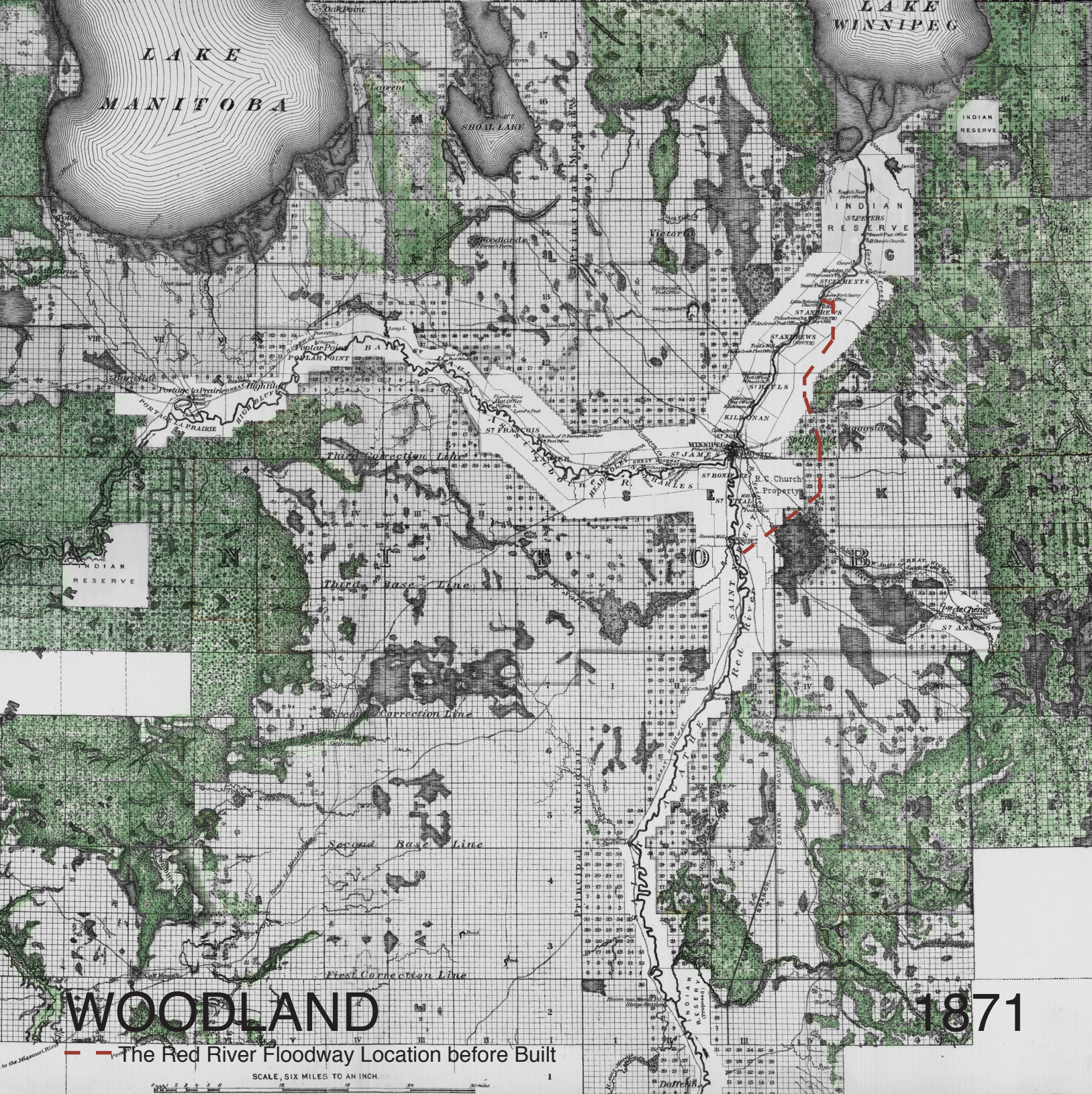
SCALE, SIX MILES TO AN INCH

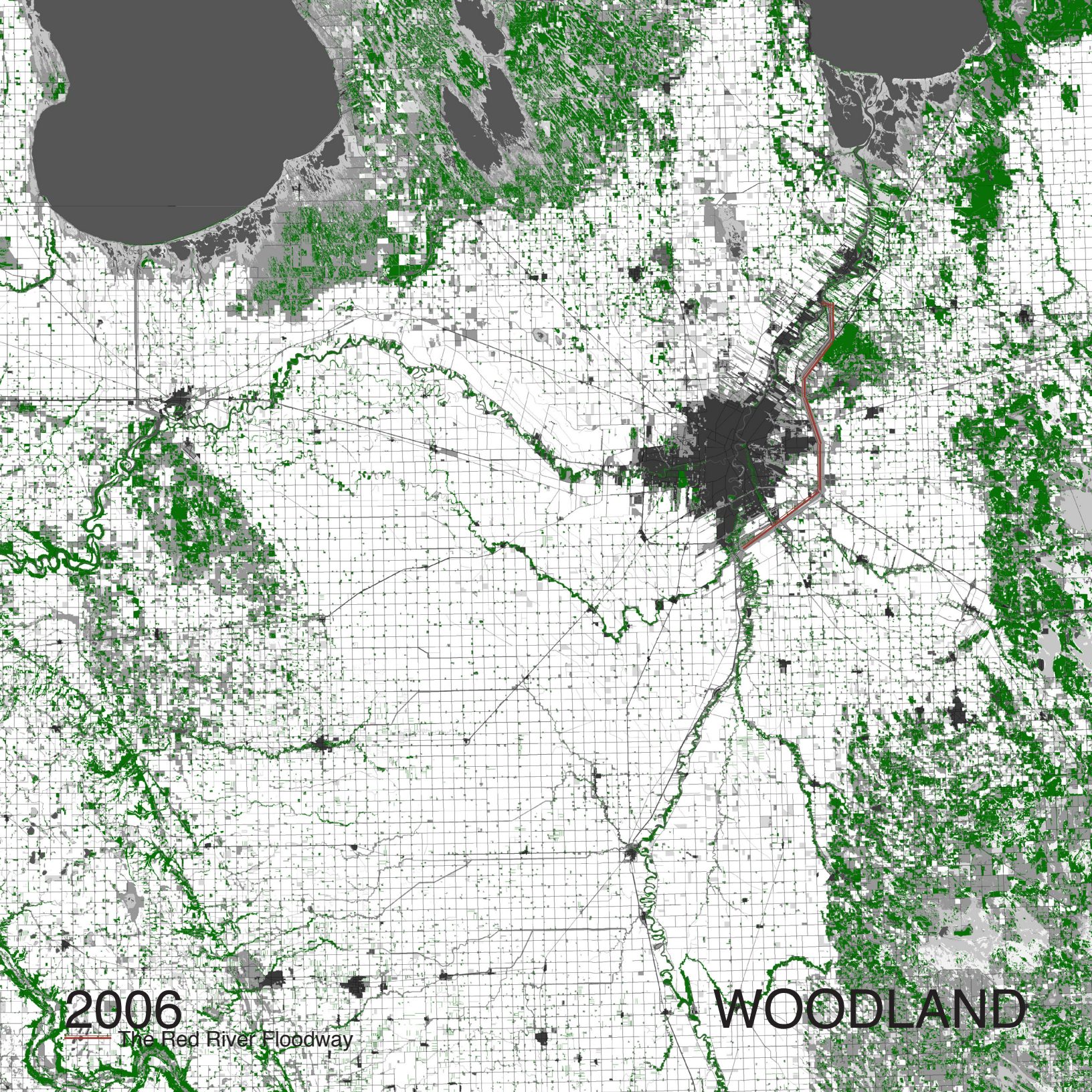


2006

 The Red River Floodway

MARSH. BOG. FENS

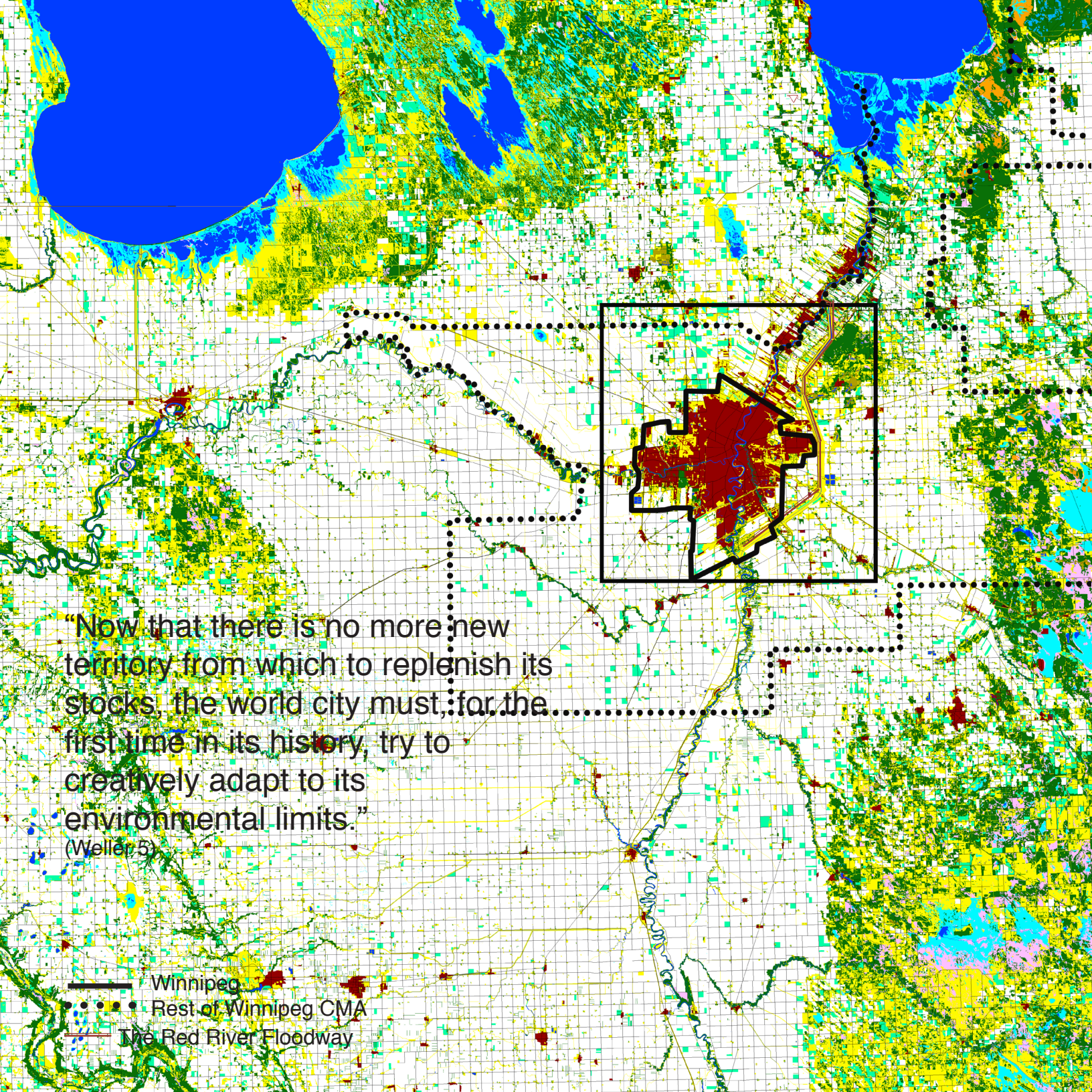




2006

The Red River Floodway

WOODLAND

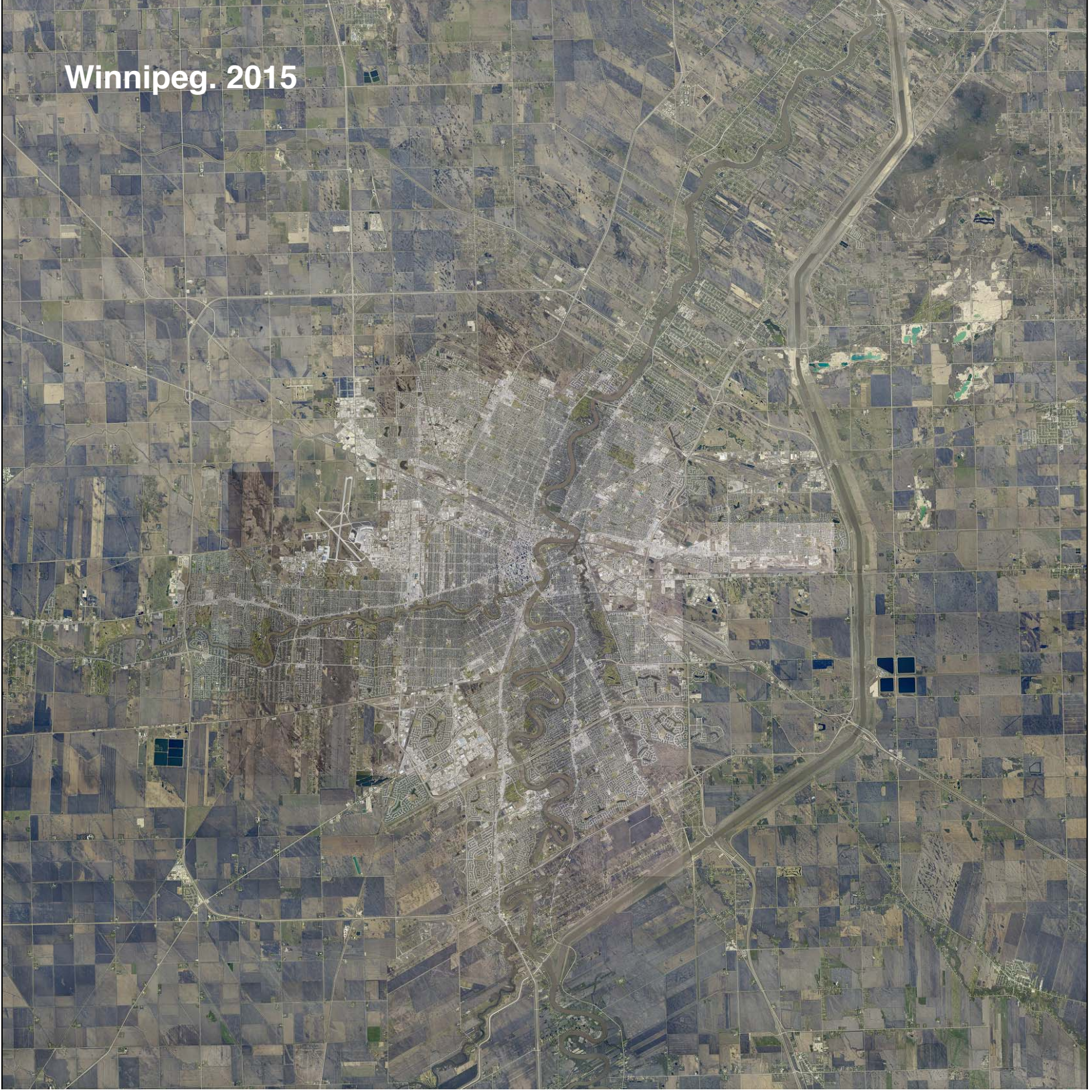


"Now that there is no more new territory from which to replenish its stocks, the world city must, for the first time in its history, try to creatively adapt to its environmental limits."

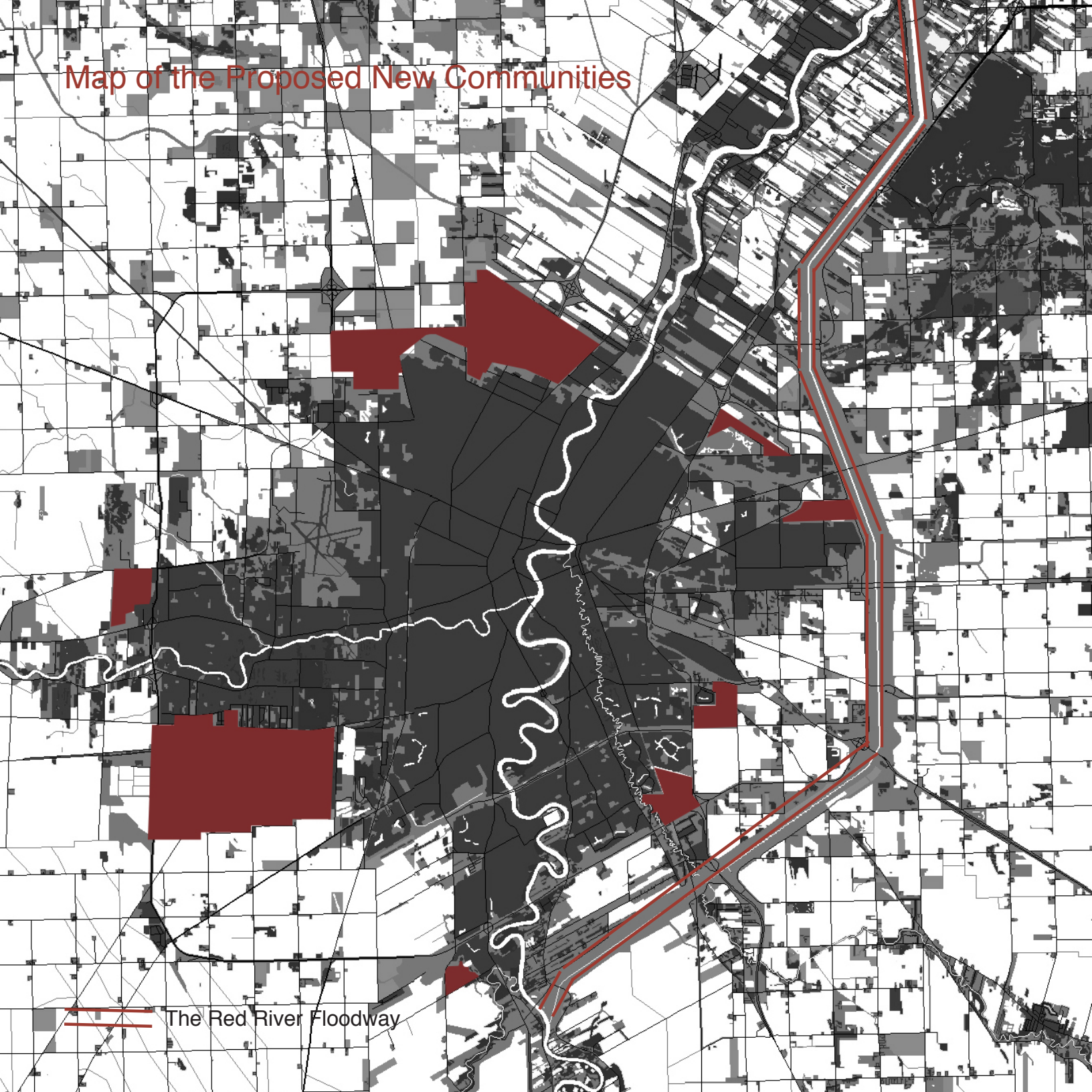
(Weller 5)

- Winnipeg
- • • • • Rest of Winnipeg CMA
- - - - - The Red River Floodway

Winnipeg. 2015



Map of the Proposed New Communities

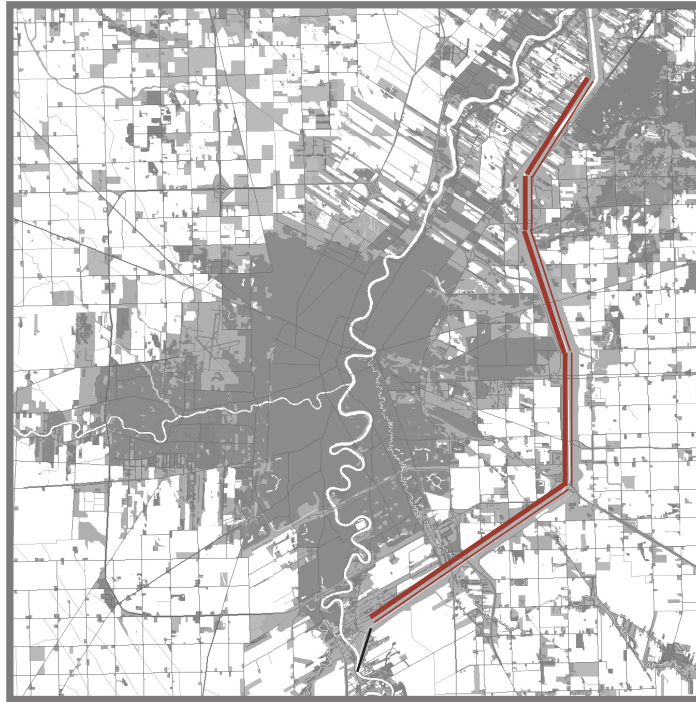


 The Red River Floodway

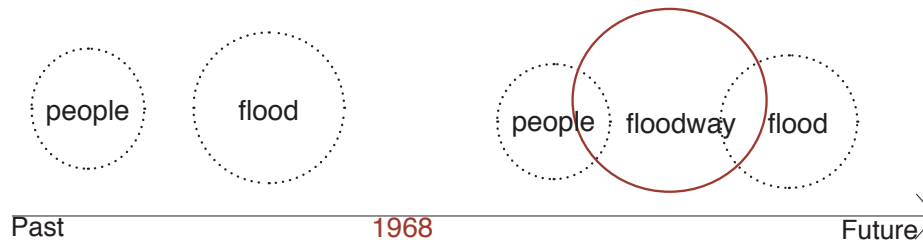
Map of the Proposed New Communities: New Communities in Winnipeg are Getting Closer to the Floodway

Because of the successful flood protection system, the city of Winnipeg continued to expand. New communities will be built in the city. New communities are getting closer to the Red River Floodway. The Red River Floodway seems no longer to be ignored by people including new immigrants who live in the City of Winnipeg. It is a huge scar that exists on the interface of the rural and urban Winnipeg. It is also a hinge between the rural and urban Winnipeg. Also, the Red River Floodway is the biggest forgotten site in the Winnipeg CMA area. However, it is also the only National Historical Site in the City of Winnipeg.

Floodway is A Way to Live with Floods, **Floodway** also Needs a Way to Live in Winnipeg



Because of floods, people need to find a way to survive flood waters. People started to create remarkable engineered constructions. The dams, diversions, and Floodway give full protection to the people who live in Winnipeg (Manitoba Floodway Authority, *2008 Annual Report*). Manitobans did their best to fight against the floods. The Floodway has become a hinge between nature and people, which creates a peaceful relationship between flood and people.



A Collection of Data

“Collect the data the right way the first time, and use it many times.”

(McElvaney 82)

Humans use data, tables, calculations and predictions to describe things and persuade others. Numbers seem to be objectively more measurable and credible to answer questions and to justify things.

In order to understand the relationships between the Floodway and people and nature, I created a question and answer data collection for the Red River Floodway. I hope this format might be helpful as a source of information for others to understand the Floodway and for the Floodway to move forward.

What is a question and answer data collection?

The “question and answer” data collection about the Red River Floodway provide objective views about the Floodway. It is a study intended to give reasonable predictions about the Red River Floodway in the future. The database focuses on the costs, demographic and economic data of Winnipeg. This database is intended as a useful source for the future design proposals such as new community development, using of the Red River Floodway as a public park and so on.

How often will Winnipeg experience a flood?

Winnipeg is a city which will experience a flood every **10** years.

Winnipeg is a city that has experienced floods in a cyclical pattern. History records that Winnipeg was subjected to severe flooding for 150 years prior to the construction of the Red River Floodway. On an average of once every 10 years, Winnipeg will experience a partial inundation with flood water.

How many serious floods did Winnipeg experience before the construction of the Red River Floodway?

Winnipeg experienced the highest recorded flood in May

There was a small population in the city at that time.

1826.

There were also floods recorded in

1882

1904

and

1916

1948.

The 1948 flood inundated an extensive area of the upper Red River Valley, causing the evacuation of several towns. In addition, by 1916, Winnipeg had grown into the third largest city in Canada with a population of 163,000.

The 1948 flood was just a start. In fact, the weather conditions started to change in the beginning of the 20th century (Red River Floodway Expansion Project).

The great Winnipeg Flood of 1950 played the role of a catalyst for the construction of the Red River Floodway.

1950

Winnipeg. Flood. Floodway

How long did it take to build the Red River Floodway?

The construction of the Red River Floodway lasted six years from

1962 to 1968.

After the flood the Manitoba government built the Red River Floodway to divert floodwaters east of the city of Winnipeg.

As a powerful decision made by the government and a massive engineering project, the Red River Floodway was seen as a miracle of the country.

Winnipeg. Flood. Floodway

Did the Floodway save Winnipeg after its completion?

The Floodway continued to prove its benefit in the later part of the century. According to the records, the Red River Floodway saved Manitoba many times after its completion,

For Example, 1966,
1974,
1979,
1996,
and 1997.

According to the records, the Red River Floodway saved Manitoba many times after its completion, the floods in both 1974 and 1979, reached approximately the same flood levels as the flood in 1950. The flood of 1997 was called “the flood of the century”. It was unimaginable to think of Winnipeg without the Red River Floodway in 1997.

Winnipeg. Flood. Floodway

How often did Winnipeg use the Red River Floodway after its completion?

According to a report in 1987, the floodway had been put in operation

14

times in the first

19

years of its existence to control threatening flood waters.

Until 1997, the floodway was in operation

20

times during the

29

years floodwaters pasted Winnipeg.

Floodway. Flood

Was the construction of the Red River Floodway too expensive?

\$62.7 million dollars
was spent in building the Red River Floodway.

In 1950:

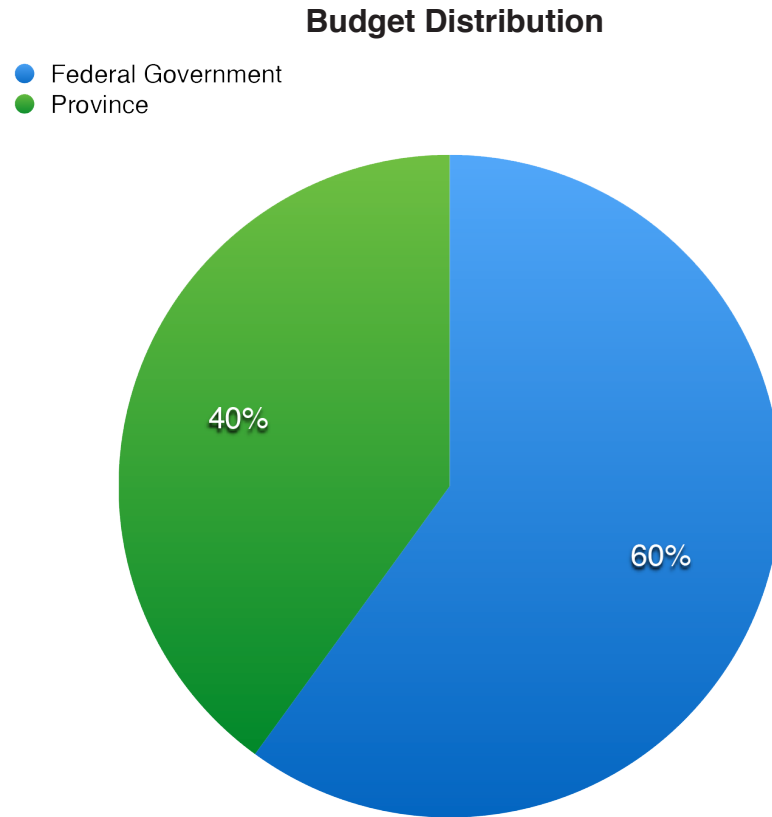
\$22 million dollars
was spent on the flood by the Manitoba Flood Relief Fund to aid
flood victims.

\$125.89 million
was spent in dealing with the flood damage.

As with other massive engineering projects in the world, the Floodway got much support by both the provincial and federal governments in its construction. This supported aided with the high cost of the project. Fortunately, time has shown the success of this project and it is a fine political achievement (Duff Roblin Fonds).

Floodway. Cost

How did the government support the construction of the Red River Floodway?



Compared with the planning budget of \$57.3 million, the Red River Floodway was completed with a cost of \$62.7 million in 1968. Based on the Federal - Provincial Agreement, the federal government contributed 60% of the total cost, and the province contributed 40% (Possfield 2-11).

Because of the powerful support from governments, on completion, the Red River Floodway was by far the largest excavation project undertaken in Canada to that date, and one of the largest man-made channels anywhere on Earth.

Floodway. Cost

Was the construction of the Red River Floodway cost-effective?

According to the Red River Floodway Authority, the cost-benefit for the Floodway project was approximately

1:2.73

calculated over a fifty-year period of only emergency use during years of extraordinarily high spring flood. However, in the flood of 1997, the cost-benefit ratio was roughly

1:40.

The completion of the Red River Floodway brought unexpected benefits in the second half of the twentieth century. Before the Federal-Provincial Agreement was signed, the Manitoba Royal Commission wrote a report on the Cost-Benefit to assess the federal proposals.

Floodway. Cost

How much did Winnipeg save from floods through the Red River Floodway?

According to the report by the Manitoba Floodway Authority (2004), in the first 19 years after its completion, a cumulative total of

\$1 billion

in flood damage costs was saved within Winnipeg.
For example,

\$350 million in flood damage was saved in

1974

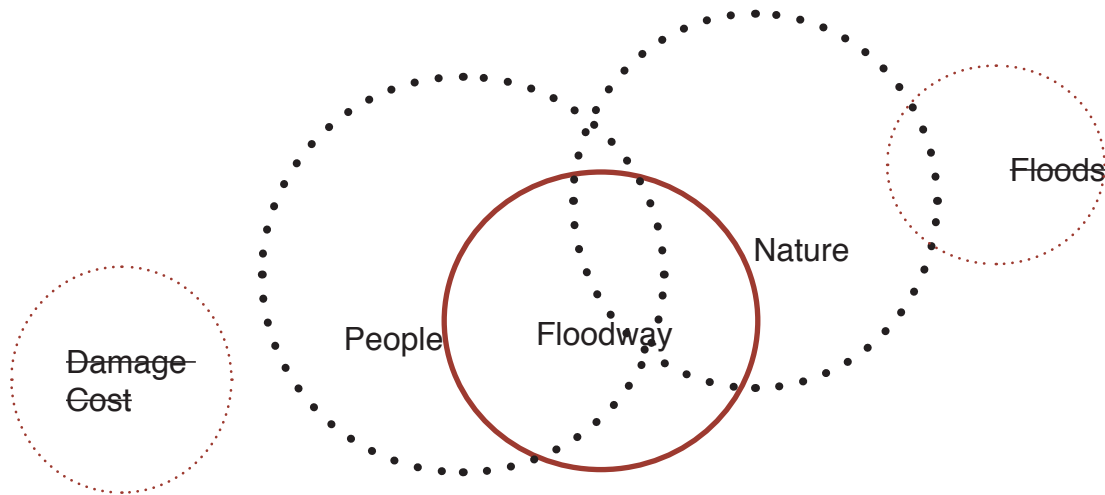
, and over **\$600 million** flood damage was saved in

1979.

Floodway. Cost

Based on previous data, people survived from floods by the Floodway. People saved money through the Floodway.

But, what else do we know about the Floodway?



How does Floodway look like in the nature in present?

Does Winnipeg safe enough with the current floodway after expansion?

How big is the Floodway channel?

The **Red River channel** varies from

200' to 500'

in width, and has an average depth at the banks-full stage of from

10' to 30'.

The floodway channel is trapezoidal in cross-section with the side sloping inwards, narrowing the channel at its base. It has a base width of

380' to 540'

a top width of

700' to 1000'

at ground level, and an average depth of

30' to 54'

The Floodway was like a channel cutting into the tall grass prairie and protecting the City of Winnipeg when flood water was coming. To look at the aerial map of Winnipeg, the Red River Floodway looks wider than the Red River. In fact, to look at the engineering design document, the channel of the Red River Floodway channel is both wider and deeper than the Red River Channel. The Floodway channel is trapezoidal in cross-section with the side sloping inwards, narrowing the channel at its base. This trapezoidal design in the cross-section of the Floodway is in order to avoid bank erosion. Because of the powerful support from governments, on completion, the Red River Floodway was by far the largest excavation project undertaken in Canada to that date, and one of the largest man-made channels anywhere on Earth.

The Red River. The Red River Floodway.

How big is the Floodway channel?

The excavation of the Floodway in 1968 was larger than the Suez Canal,
but smaller than the Panama Canal.

The excavation of the **Panama Canal** is

177 million cubic metres.

The excavation of the **Suez Canal** is

75 million cubic metres,

The excavation of the **Red River Floodway** is

76 million cubic metres,

and it was **expanded with the excavation of**

21 million cubic metres.

(2010, Farlinger Consulting Group Inc)

The Red River. The Red River Floodway.

Why the Floodway channel is so huge?

This is because the Floodway channel was designed with a flood protection level based on previous recorded floods.

Based on the flood in **1950.**

Winnipeg designed the floodway with a maximum flow of **60,000 cfs.**
Which was considered sufficient to protect the City of Winnipeg from a

160 year

flood. However, this was recalculated as a **100 year**
flood protection in

2009.

After the

1997

flood, Winnipeg expanded the Floodway to a maximum flow of **140,000 cfs.**

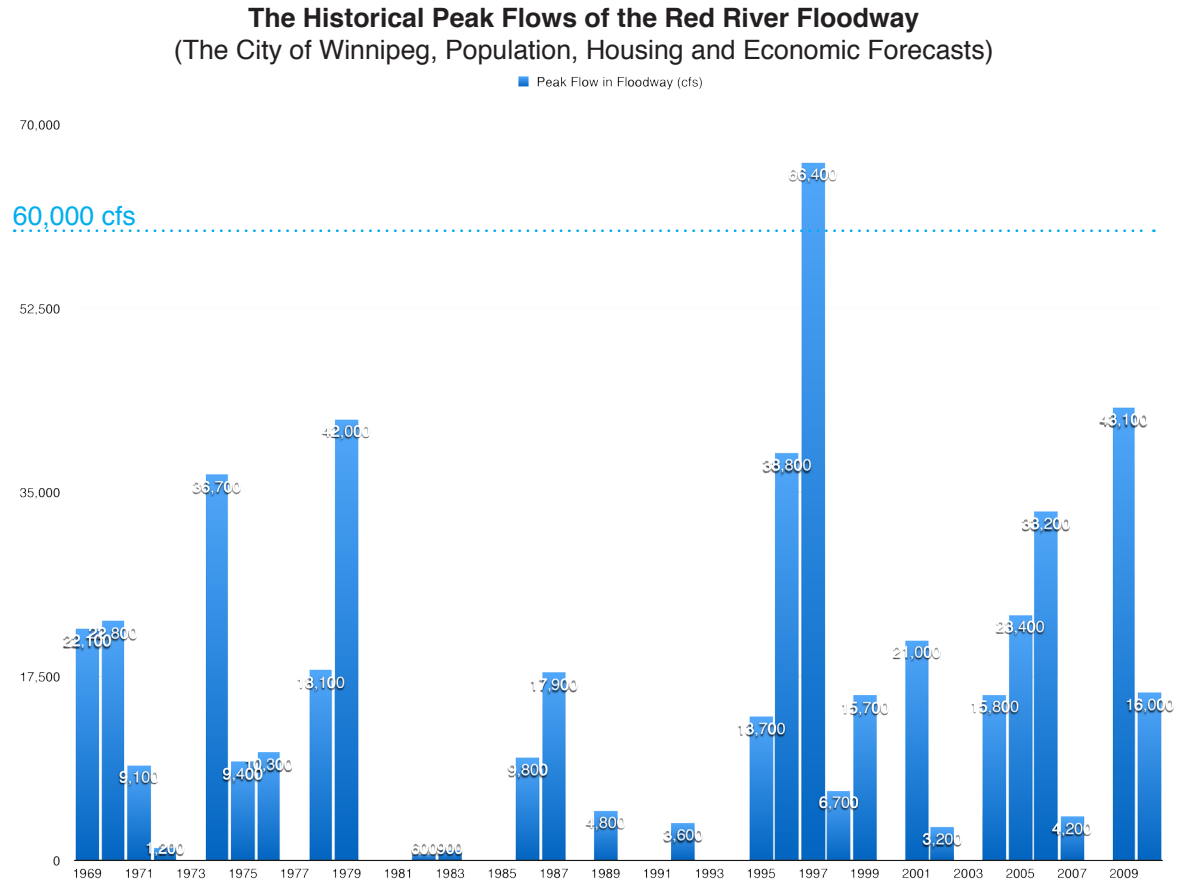
And this was defined as **700 year**
of level of protection

(Manitoba Floodway Authority. *The Red River Floodway Expansion Project: More Protection. More Opportunities*)

Flooding is uncertain although the Red River Floodway is always there. Spring floods come to Winnipeg every year although the Red River Floodway keeps dry for the rest of the year. The 1997 flood exceeded the flow of the 1950 flood by 50%. When engineers talk about the 700 year flood and the 100 year flood, they give names to possible flood events that reflect past experience.

The Red River Floodway.

What were the the whole historical peak flows of the Floodway channel like?

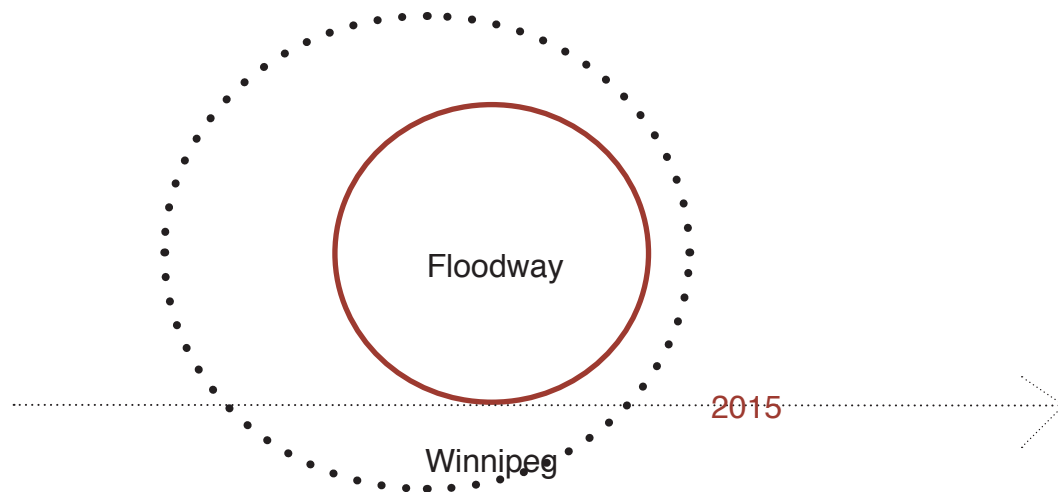


Because of the expectation of returning the Red River to a safe elevation, the Floodway channel was built in 1968. Because of the unexpected flood in 1997, the Floodway channel was expanded. \$63 million was spent in the first construction, and \$665 million was spent for the expansion. However, looking through the chart, there has only been one instance (In 1997) when the peak flow exceeded the original designed maximum flow of the Floodway.

The Red River Floodway.

When there is no more concern about floods in Winnipeg, how should we think about the future of the Red River Floodway?

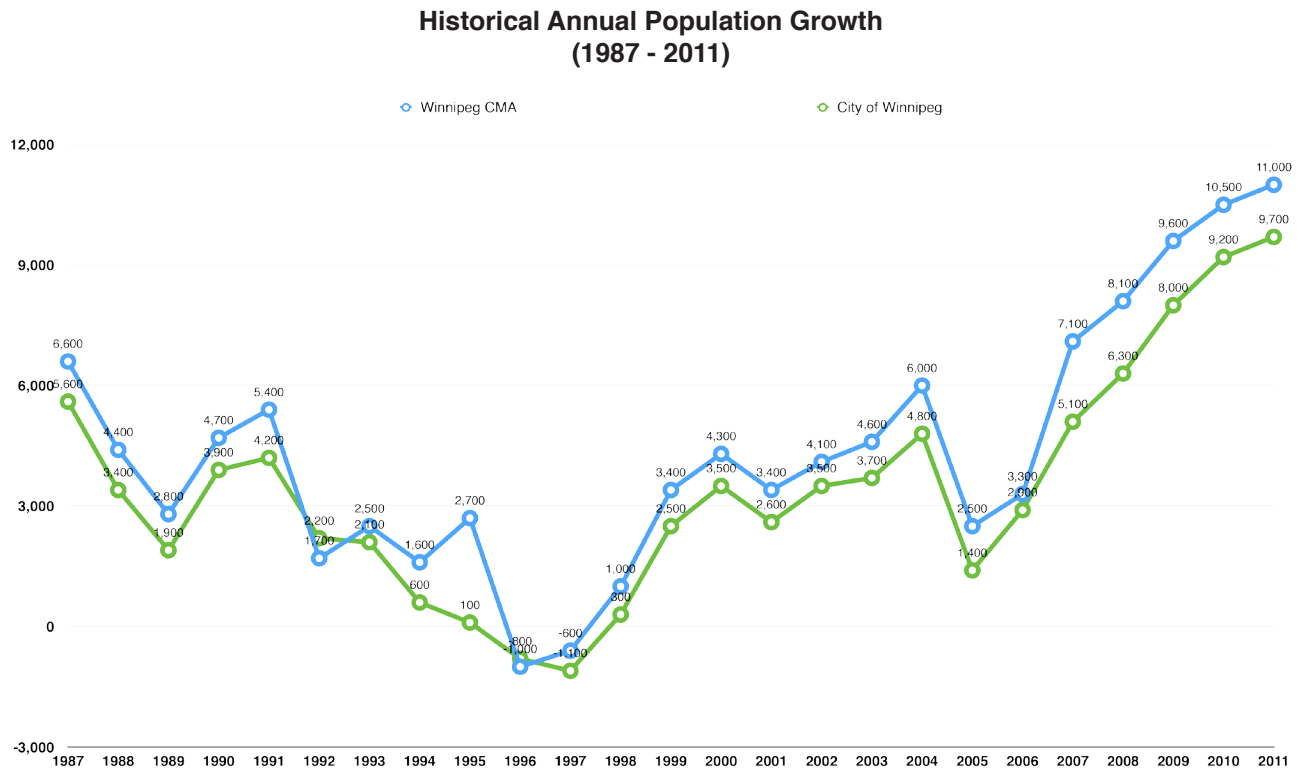
The 1997 flood exceeded the flow of the 1950 flood by 50% and was the first inundation in 145 years to attain such a magnitude. Flooding is uncertain although the Red River Floodway is always there. After the Floodway expansion, the city has a 700 years level of flood protection. Currently, the city should be far away from the flood damage. How about the future? For now, the best way to think about the future of the Floodway is to think about the future relationship between the Floodway and Winnipeg.



In 1997, Winnipeg was the 8th largest city in Canada. As a main Canadian transportation, and manufacturing, and metropolitan business centre, Winnipeg's population increased from 163,000 to 660,000 in the last century. Compared with 1950, the city almost doubled its population and tripled its number of dwellings.

The Red River Floodway.

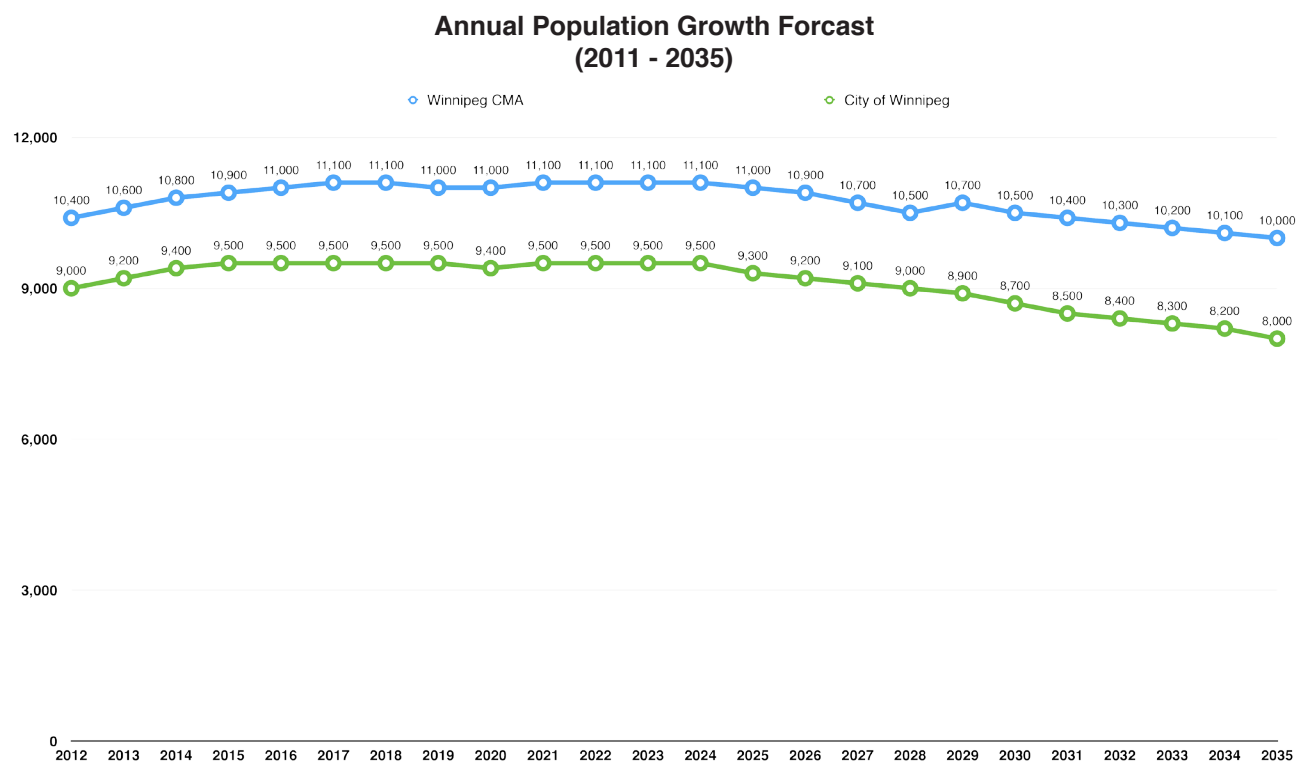
How has Winnipeg's population change through its history?



For the City of Winnipeg, the Conference Board indicates that during the 1990s, Winnipeg lost population to migration – more people were leaving Winnipeg compared to people moving to Winnipeg. The population growth became negative in **1996** and **1997**. After 1997, the migration trend began to change and by 2004 the net migration was positive, with an increase of over 3,000 people per year. After 2008, net migration began to show rapid growth.

Winnipeg. Population.

How will Winnipeg's population change in the future?



According to the chart, Winnipeg is expected to attract an average of more than 9,500 net migrants each year from 2012 to 2035, which is about 1.2% population growth per year. Because of the stable natural growth in Winnipeg, migration has become an increasingly important factor for population growth. Therefore, the ability to attract new migrants will continue to be an essential determinant of its future potential.

Summary of Site Research

Site research is a part of Grounding. It is also a process in terms of understanding the sense of place. For the Red River Floodway, I chose to engage in mapping and database creation. By doing so, a designer must make repeated site visits and studies. According to Christophe Girot, a site contains both a residue and a promise. The site research is in a four - dimensional analysis, and looks into the site from the past to the present.

In the research, in order to give a more objective description, I chose both a mapping and database to represent the context, history, reality and possible future of the site. The content of the site research is represented as story - telling and logically gives a full description of the Floodway which is based on careful reports, reading, history, research and systematic analysis.

The site research of the Red River Floodway was started with the discovery of the successive histories of Manitoba, especially the flood history of Manitoba before the construction of the Floodway. The history of the land represents the land's context of soil, water, climate, ecology and narratives. Then the study leads to the land's surrounding context, its natural resources and the development of Winnipeg, and how these things result in the Red River Floodway. By doing so, some of the intangible aspects of the site became more clearly visible

This process has less to do with the individual imagination than with careful research and analysis. It may not be directly connected to the design proposal in this stage. But, it is a process of understanding the whole context, by asking questions, answering questions, and then refining information. The different site layers emerge from invisibility.

Site Design of Red River Floodway

A Re-representation for the landscape

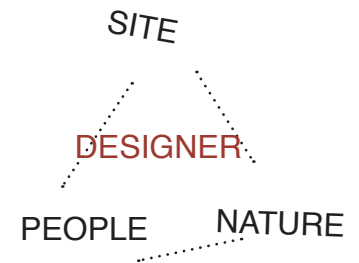
What I hope to design is not important. What I am designing is not important compared with what will happen after this and what will go beyond this design.

A Thinking on Landscape Design and Designers

For a long time I thought that a landscape designer was a person who controlled the balance between people and nature in the design. But I now realize that humans do not have the power to be able to control the balance of nature. There are many limitations in reading a landscape through just one aspect of design; time, for example. There are also unknowns in every site and location. Uncertainty plays a major role in nature. Designers must constantly seek a better understanding of the natural world. The world has existed long before humans and the designer can play a part in the communion between humans and the Earth.

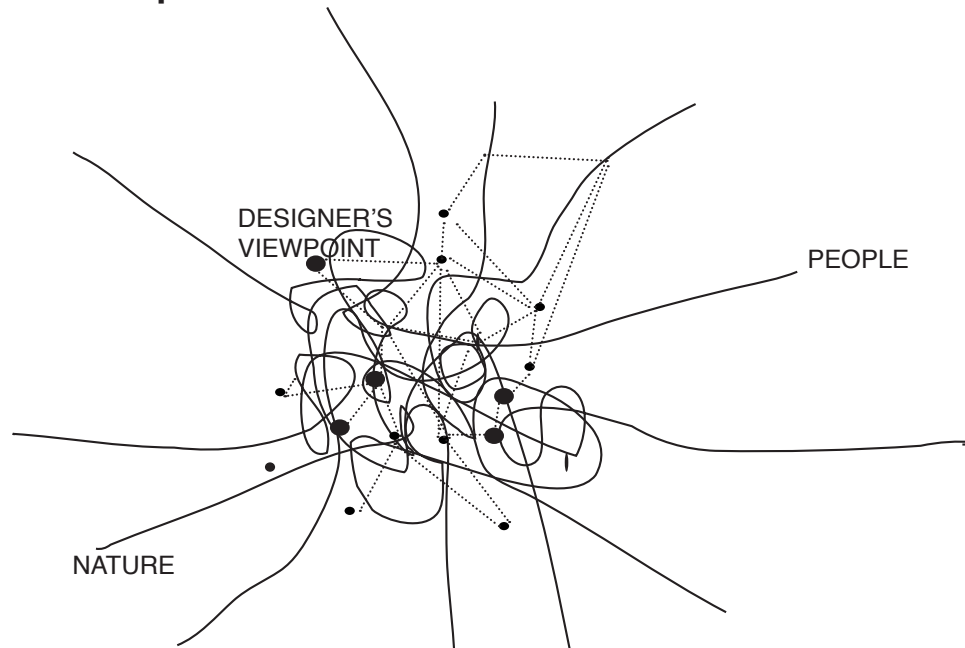


In beginning to understand the scale differences between the earth and its human inhabitants I constrained the role of the design of the site into a triangle of three points: site, people, nature. But I think now that landscape is more than one site or one designer and landscape design is not simply represented by a triangle.



According to Yu in his book “The Art of Survival (4)”, landscape can be created and preserved as a medium, and as connecting the link between land, people and spirit. Medium is such a useful word to describe the condition between landscape and people. It does not limit the time or the scale. It can be invisible and fluid.

A Thinking on Landscape Design and Designers: The Landscape Cloud



Landscape is like a cloud floating around in the world. It can be huge or small and it is always changing. Designers keep looking at the landscape and adopting lots of viewpoints in the cloud. There are relationship lines between nature and people in the cloud and these lines affect the status of the cloud. The viewpoints made by a designer may or may not occur on the relationship lines. However, designers know the existence of the landscape cloud system and they keep observing and creating lines between viewpoints. Whether or not it is the “right way” to look, a network is built slowly over time in an infinite variety of circumstances. That network creates better living conditions between humans and nature.

Therefore, the mission of a landscape designer is not just the creation of one design or trying to balance the relationship between people and nature. To be an acute observer, to help others to see and to consider what will be shared with future generations are invaluable qualities in a designer. My personal aims and goals in designing a project have less important than the life that is established by the passage of time within the work in which I had a beginning hand.

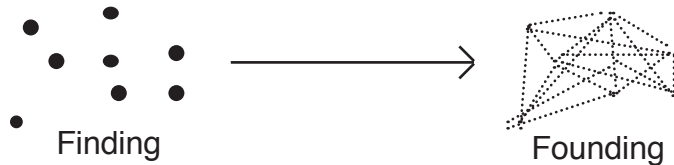
From Finding to Founding

The site design process can be reflected in the third and fourth acts of the four trace concepts by Christophe Girod: Finding and Founding. Founding is accompanied by finding and serves as a whole site design process.

According to Girod, finding is the thing discovered. It can be an activity or an insight. It is not a creation but something unique to a place. These are the viewpoints discovered by a designer. Thus all the findings of the Floodway are unique to the Floodway.

On the other hand, Founding is the act that synthesizes the previous three acts into a new construction of the site. It is the line making connections between viewpoints, which gradually build a web into the landscape.

Using the concept of the “Landscape Cloud” to describe this process:



the web of landscape designs are built accompanying the discoveries of viewpoints in looking at the site.

In the following section, I will list the findings in looking at the Floodway and explain the proposed founding of this place.

These findings are a result of careful thinking over the discoveries of the landscape while there are always chance and indeterminacy in the discoveries. Indeed, the chance and indeterminacy challenge the ability of a designer in looking at a place.

The First Finding:

Vegetation becomes scarred in the big channel of the Red River Floodway.

Referring to the grassland map of Winnipeg, the whole Red River Floodway channel was seen as grassland in Winnipeg.

In the 1960s when the Floodway was newly constructed, the Floodway looked like a desert. This desert was not the expected result, according to the historical documents (2002). Both the Department of Agriculture and the Department of Natural Resources played roles in the construction of the Floodway. According to the Department of Natural Resources (2002), some 3,000 plantings of 40 different types of tree were done in the heavy undersoil excavated during the construction. However, for uncertain reasons, the mortality rate of the planting has been high. The result of that mortality left the Floodway looking like a desert once again.

However, a vegetation coverage has established itself in the channel as a result of seeds being carried by wind and water into the Floodway. Because of the huge scale of the channel and the special cross-section inside the Floodway, this landscape experience is a unique and memorable one.

Using a simplified diagrammatic drawing to represent this finding is a way of talking about the relationship between the Floodway and Nature:



In terms of the vegetation coverage of the Floodway, from the past to the present, the relationship between nature and the Floodway is getting closer.

The Second Finding:

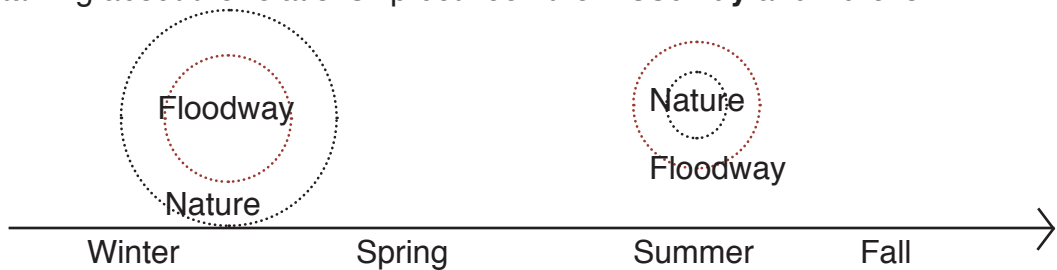
Amazing horizon and sky emerges on the Floodway.

Beside the huge channel with prairie-like vegetation coverage, the wonderful scenery of the sky and clear horizon is always the main characteristic of the Floodway. There is no better place to enjoy the transformations in the sky and the sublime horizon below it.

In Winter, the whole floodway was under snow and covered in white except for the sky. The sky was colorful and varied with time and climate. The place was like a canvas in Winter and changed the Floodway into an huge outdoor gallery of colorful paintings above the human head. At night, the sky burns into a screen and the Floodway is like a cinema showing movies of stars, moon, and the northern night.

In summer, the Floodway changes into a green prairie. A stream in the center of the channel reveals the water level of the Red River as well as the rainfall in Winnipeg. The channel of the Floodway was yellow in the beginning of the spring and getting green and active with ducks, birds, and other wildlife. The horizon is the surface line of this amazing landscape at this time. It remains the special topography of this place. Winnipeg is not so flat in this place.

Using a simplified diagrammatic drawing to represent this finding in the way talking about the relationship between the **Floodway** and **Nature**:



As the seasons alternate, the emergence of the relationship between nature and the Floodway is different. In winter, the Floodway is more like a landscape packed inside nature. In summer, the Floodway is like a landscape having nature processes inside its channel.

The Third Finding:

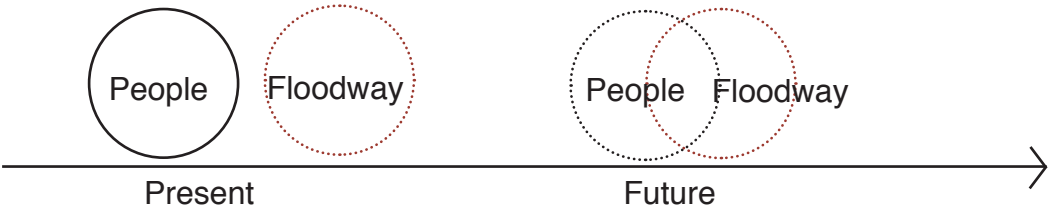
Less concerned with floods compared with more concerns about living with the Floodway.

According to the database of the Floodway, Winnipeg seems to be less concerned with flood inundations in the future. In addition, there is nothing more people can do as there is always uncertainty in weather and climate change. However, the thing which people understand is that the Floodway is always here in Winnipeg. The thing can be anticipated is that new communities will be built around the city. The thing people hope will happen is to have better and sustainable living in the future in Winnipeg.

Currently, comments from residents of the City of Winnipeg indicated they were not in favor of using the Floodway due to bank erosion, safety, and repeated flooding issues in the Red River in summer(2010).

In the future, the Red River Floodway should be viewed from economic and demographic perspectives. The scale of a project like this has potential in providing jobs and economic values to the City of Winnipeg. Despite the basic function in diverting floodwater, as an almost unregulated and undeveloped national historical site, the Red River Floodway has a huge potential. The relationship between the Floodway and people could be totally different now.

Using a simplified diagrammatic representation of the relationship between the **Floodway** and **People**:



A trend for people living inside Winnipeg is to see the Floodway and to engage with it in the future.

“We already sacrifice our land, crops, peace of mind, business, income, time and attention, money and even access to our homes during emergency spring operations.”

- A resident south of inlet (2010)

The fourth Finding

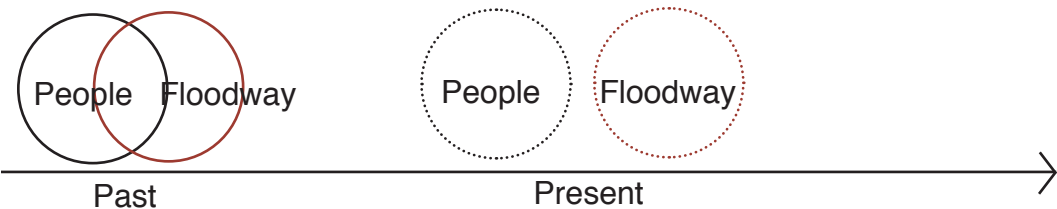
Manitobans have achieved a world famous achievement in flood fighting with less memorial events or festivals.

As outlined earlier, excavation of the Floodway in 1968 was larger than the Suez Canal. According to the HSMBC (2010), the Red River Floodway has had a particularly important symbolic value to Canadians as an technological achievement. It was a scale of construction that represented a major technological advance of its era.

The Red River Floodway not only represents an outstanding engineering achievement but also a remarkable triumph of man over unpredictable nature. This remarkable triumph represents the invisible indomitable spirit of Manitobans, which seems to have faded from people’s memories after the serious inundations in 1950 and 1997.

To compare this to a site in China, which is a somewhat similar story about floods, the Dujiang Weir has an annual memorial event. Ancestors built this water conservancy project 2000 years ago, because of the flooding issues for the city of Chengdu which is situated on a flood plain of the Yangtze Rlver. To memorialize this achievement in flood fighting, a “Drainage qing ming Festival” in Dujiang Weir has been established in the month of April. People celebrate this season with a huge ceremony at this festival. Currently, the Dujiang Weir in China was called a Chinese national treasure in China and was visited by millions of people every year.

Using a simplified diagrammatic drawing to represent this finding in the way talk about the relationship between the Floodway and People:



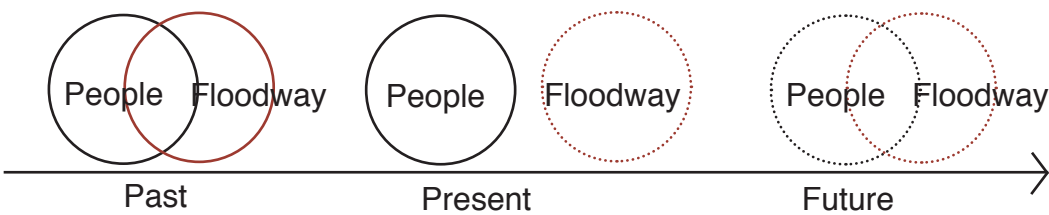
The relationship between the people and the Floodway has been separated since its construction although it is a place worth being remembered and understood.

“We were reminded again this year of two immutable truths: the awesome power of mother Nature and the indomitable spirit of the human family.”

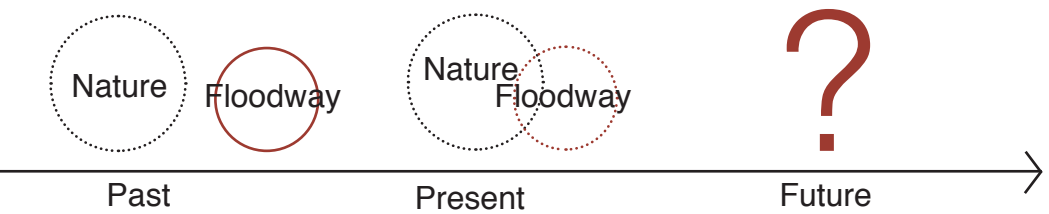
- Duff Robin (1997)



Summary of Findings



In the future, to look at the relationship between people and the Floodway, the population is undoubtedly growing in Winnipeg and new communities will be built close to the Floodway.



The relationship between nature and the Floodway, the beauty on the Floodway is natural and precious to Winnipeg.

To summarize these findings diagrammatically, how might the Red River Floodway evolve in for me of its relationship with nature and people? How should we represent these findings and the uniqueness of the Red River Floodway? These are the questions need to be solved in the founding of the Floodway.

Founding of the Red River Floodway

Based on the characteristics, history, narrative, and current conditions of the Floodway, this landscape affords both conservative and innovative design proposals on it. The Floodway needs both to recover its narratives and to present something beyond people's expectations.

As I described landscape as a cloud with designers' viewpoints at different times in different angles, it is not possible to see all the things and simply solve the problem at once. For now, it is not realistic to design the entire length of the Floodway channel. In this practicum, I have addressed some aspects of the Red River Floodway that are appropriate at this point in time for design interventions. This is a starting point. In the future, I am looking for other designers to understand and work on the Red River Floodway, to represent it. The more we see, the more we understand, and the Floodway becomes a better appreciated and used part of Winnipeg. This is the design I am working for.

From Representation to Enjoyment of the Floodway

"I hope that my work acts as a device for the revealing of forces that are (or have become) imperceptible, for generating a feeling of oddness, creating a source of different attention, a different vision, a different emotion."

(Descombes par. 2)

Rather than focusing on changing the Red River Floodway, the *founding* of the Red River Floodway represents the Floodway to help others see, understand and enjoy this wonderful space in future.

Spring fear and happiness

Can we change our idea of the Spring in Winnipeg? Where is “the spring” of Winnipeg? Water inevitably becomes a good measure for discovering Spring in the city - unfortunately most often by water splashing pedestrians from the road. People have difficulty walking on the sidewalks and drivers do not pay attention to the people being splashed by their driving through the deep pothole puddles on the street! What a sad story!

However, Spring is not a sad story, at least, it does not have to be for Winnipeg. According to Yu, Li and Liu(7), the flood was seen as a friend in Taizhou. How can we look at, and design a place based on seasonal change and the experiences of people?

Is Spring in Winnipeg a mixture of fear and happiness? McHarg (97) stated that we can build an idea that all the nature phenomena are interacting with each other and they must provide both limitation and opportunities together for humans. When the weather indicates a change when people do not need to be wrapped in coats and jackets and winter boots, when the birds start to sing and when the geese come back from the south - there should be a celebration. Winnipeg should gather to share and to rejoice the coming of Spring, as it should also cheer for the unique Prairie Winter!

Founding of the Floodway

“But the new ordering of time should affect not only nature, it should affect ourselves. It promises us a new kind of history, a new, more responsive social order, and ultimately a new landscape.”

(Jackson, Discovering 157)



Another Timeline to Consider to Enjoy the Floodway based on Solar Terms

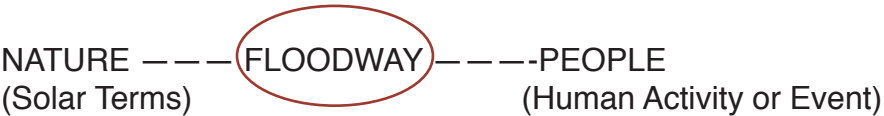
There are 24 divisions of the solar year. A solar term is any of 24 points that matches a particular astronomical event or natural phenomenon. The points are spaced 15° apart along the ecliptic and are used by lunisolar calendars to stay synchronized with the seasons, which is crucial for agrarian societies.



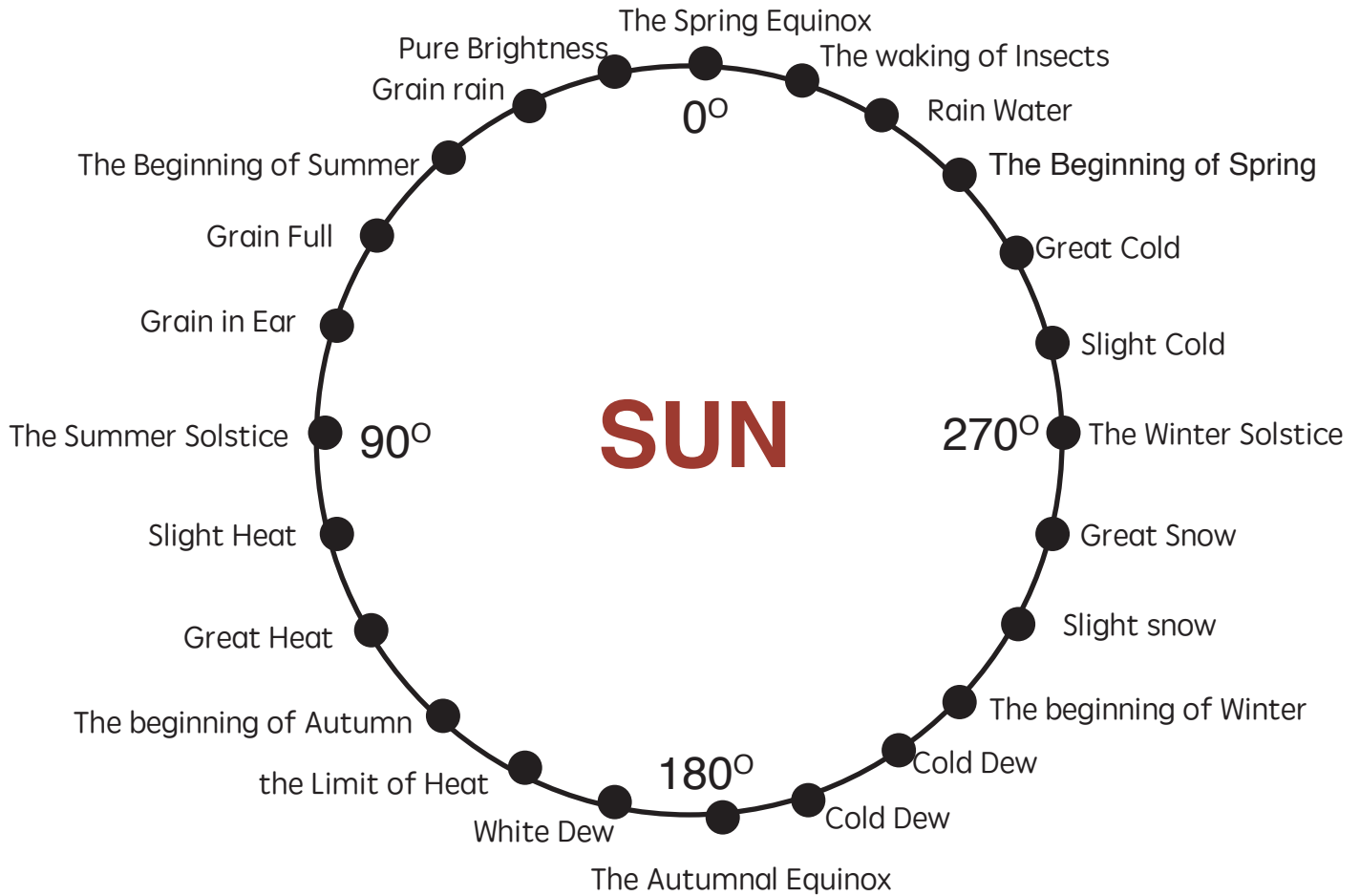
These solar terms reflect the change of seasons such as the Beginning of Spring, the Beginning of Summer, the Beginning of Autumn, and the Beginning of Winter. Some embody the phenomena of climate like the Waking of Insects, Pure Brightness, Lesser Fullness of Grain and Grain in Beard; and some indicate the change of climate like Rain Water, Grain Rain, Lesser Heat, and Greater Heat.



The solar term “transformation time” can be used as an event or incentive for people to look at the Floodway more frequently. Following these events, people will be introduced to seeing the Red River Floodway in a different way and they begin to anticipate the next event. The events could be an experience of nature and another way of looking at the Floodway.

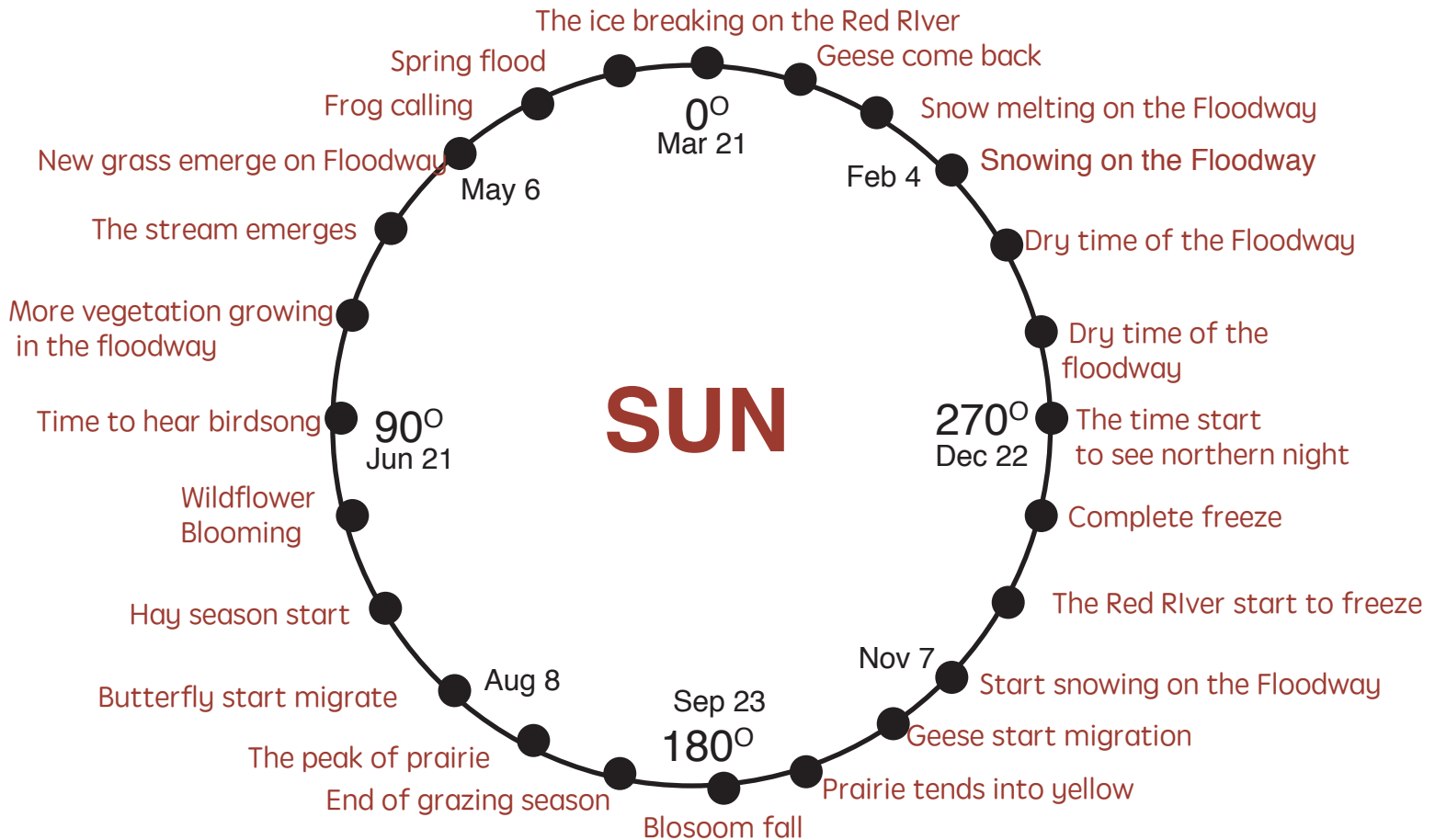


Traditional Lunisolar Calendar



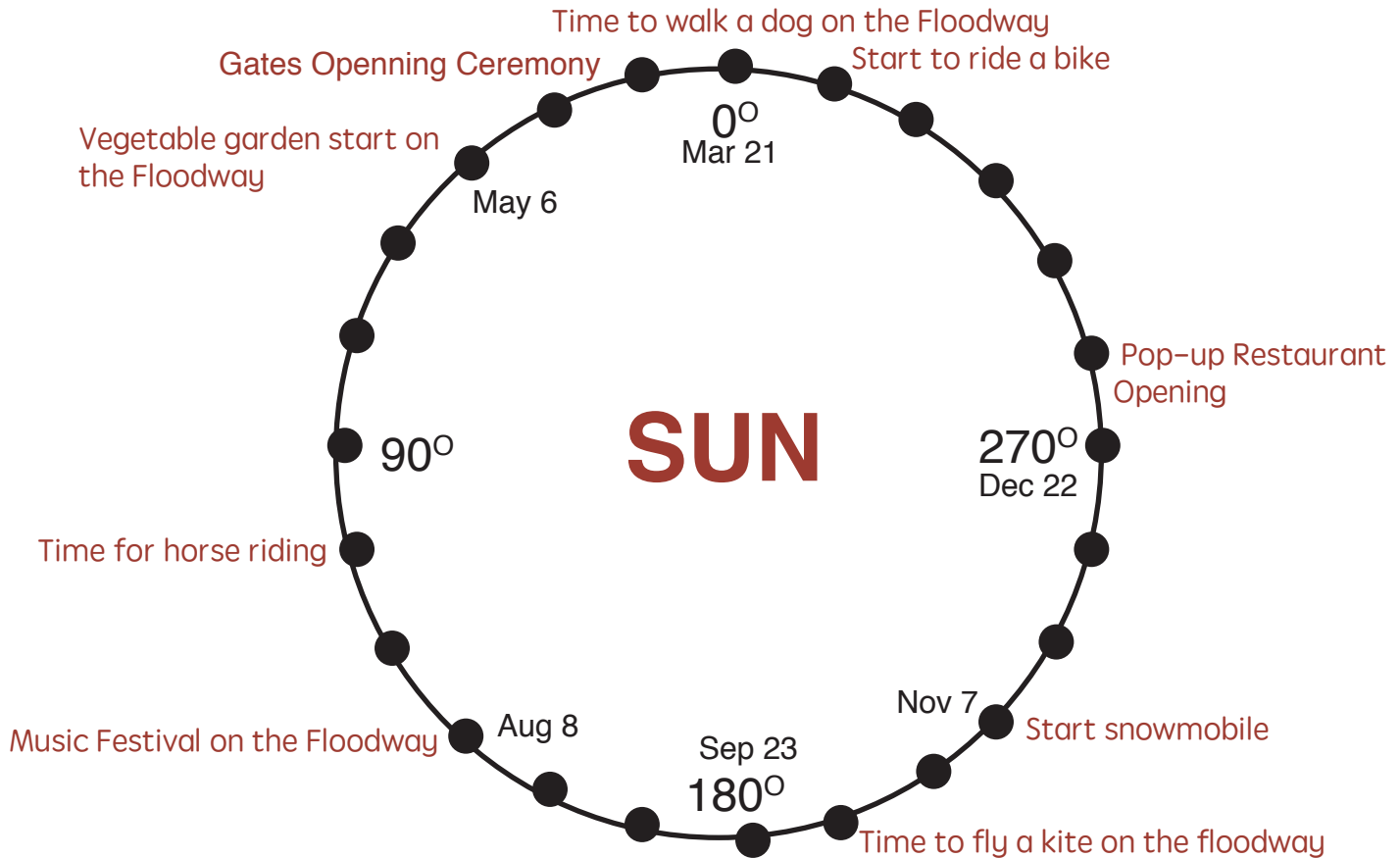
A traditional lunisolar calendar was created to govern agricultural arrangements in ancient China and is still used.

Lunisolar Calendar for the Red River Floodway



The lunisolar calendar for the Red River Floodway is a calendar showing the divisions of the the Floodway during the year. It is created very specifically for the Floodway to help people to understand this rich, diverse environment in the city. Some events have been mentioned, but there are undoubtedly others that could be added!

Events Suggested for the Red River Floodway



In order to help people enjoy the Red River Floodway, based on the lunisolar calendar, some events are suggested throughout the year. I created some, others were observed on the Floodway during the research. More events can be suggested by others.

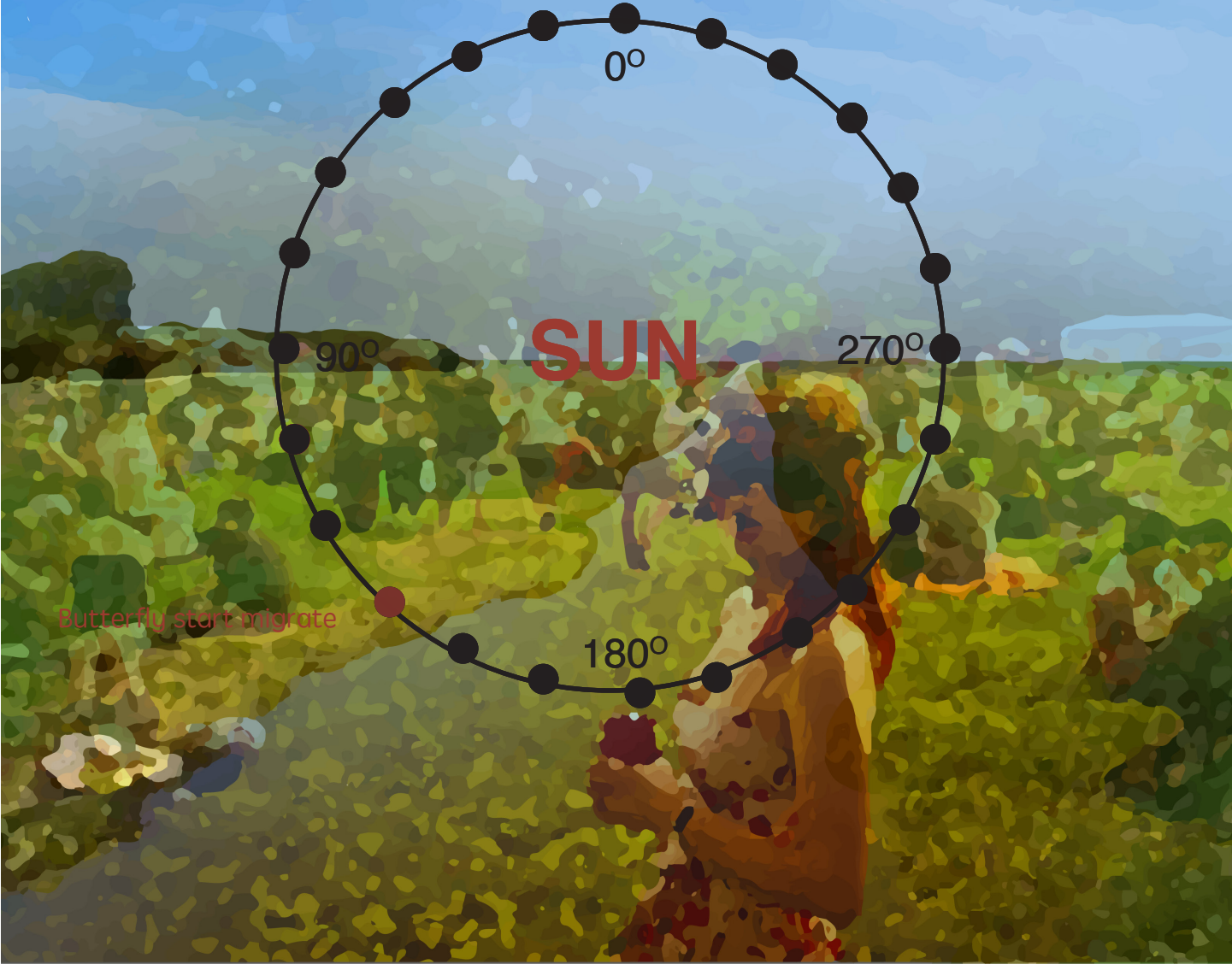
A Gate Opening Ceremony at the Spring Flood on the Floodway



Riding a Horse at the Wildflower Blooming Time on the Floodway



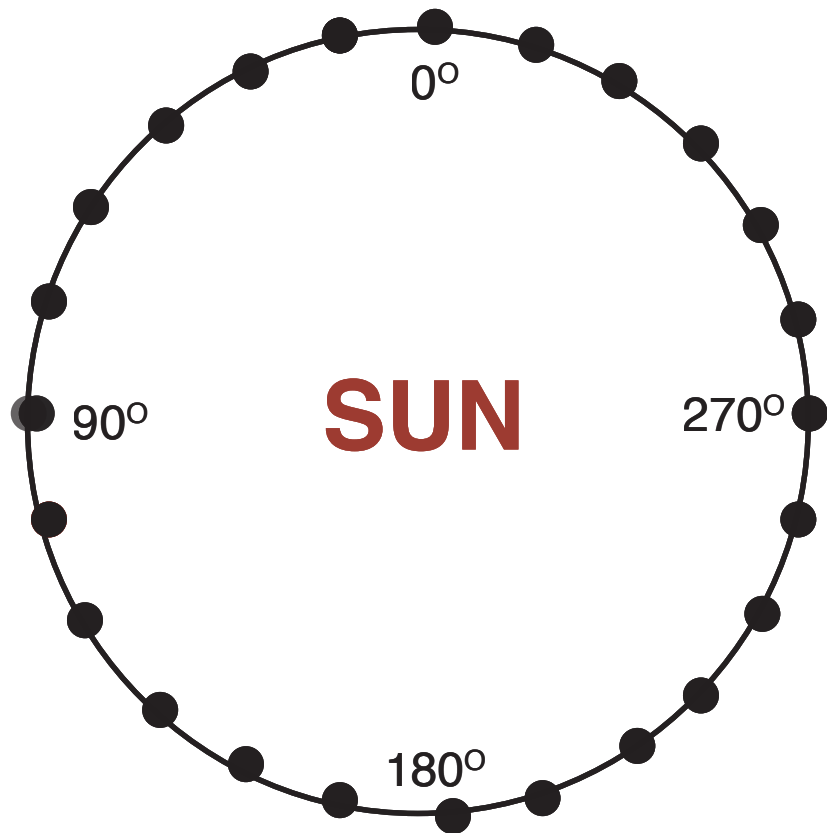
Conducting the **Music Festival** at the **Time Butterfly Start Migration** on the Floodway



Eating in the Pop-up Restaurant at the Slight Cold on the Floodway



In The Future



More activities are waiting to be discovered by others. The Red River Floodway is a place about time. It is also a place about becoming visible.

At the End

*“I think that, with time and experience, poetry can attain a state of altruism.”
(Godmer. 124)*

I did this work because I did not want to repeat a particular design model until I have lost myself as a designer. This is not a work about idealism, but a work about approaching reality. I am eager to be a practicing designer. I want to help myself to be more confident about what I will do in landscape but I am not a narcissist. In fact, it has not been comfortable to get naked in the process. It is also not so comfortable to start a work without a plan and a program. Fortunately, I developed the work despite those discomforts.

In addition, I do not think that I created a brand new thing, There is also not much difference than previous design representations. I followed the same design stages: site visit, site research and site design. I used similar strategies with photo-taking, sketches, mapping and so on. I have only discovered the secrets within designer's work in my design process. I propose both uniqueness in myself and variations for others. This is the essential part to me.

Landscape design allows a diversity among landscape designers. Designers think differently but try to create a common better future.

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